ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

ENTERED AT THE SPRINGFIELD POSTOFFICE AS SECOND-CLASS MATTER

VOL. XVIII SPRINGFIELD, ILL., AUGUST, 1910 No. 2

ORIGINAL ARTICLES

PELLAGRA, WITH SPECIAL REFERENCE TO ETIOLOGY AND DIAGNOSIS.*

GEORGE W. WEBSTER, M.D.

President Illinois State Board of Health: Member Illinois Pellagra Commission

CHICAGO.

Because of its economic importance, its unknown cause and rapidly increasing prevalence in our own country and especially in our state, pellagra is a disease of more than passing interest and importance.

Economic.—Last year[1] corn constituted the greatest crop of the civilized world—3,250,000,000 bushels—2,500,000,000 being produced in the United States, being worth almost as much as the great crops of hay, cotton and wheat combined, and of this amount Illinois shipped 131,363,000 bushels. As Mr. Wilson said, this wealth, taken out of the soil of the United States in four months and amounting in value to over a billion and a half of dollars, is enough to cancel the interest-bearing debt of the United States, pay for the Panama Canal and build fifty battleships.

Historical.—Pellagra[2] was probably first observed and correctly described by a Spanish physician, Gaspar Casal, in 1735, and his observations were published in 1762 by Joseph Garcia after Casal's death. The name pellagra is said to have been given the disease by Frapoli, of Milan, in 1771. The literature shows that the disease spread from Spain to France, thence to Italy, Egypt, thence to other parts of Africa, Austria, Servia, Bulgaria, Roumania, Asia Minor, India, Mexico, Barbadoes, and thence to North and South America.

Dr. Lavinder says[3] there seems little doubt that pellagra has existed in the Southern States for many years—twenty-five or thirty at least—

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

1. Watson, E. J., Commissioner Department of Agriculture, Commerce and Industries, Columbia, S. C.; Report of South Carolina State Board of Health, p. 147.
2. Hyde: Pellagra and its Problems, p. 2.
3. The Prevalence of Pellagra in the United States, 1909, p. 6.

and has been regarded as unusual manifestations of tuberculosis, syphilis, malaria, acute delirium, hookworm, dermatitis exfoliativa, eczema, etc.

Two cases of probable pellagra were reported forty-five years ago by Dr. Gray, of Utica, New York, and Dr. Tyler, of Somerville, Mass. Then a case was reported by Dr. H. F. Harris, of Georgia, and one by Dr. S. Sherwell. The first cases in Alabama were reported in 1907. In 1908 Dr. Lavinder reported cases at Wilmington, N. C. In July, 1909, Dr. Lavinder found cases at Nashville, Tenn., and three at Dunning, Ill., these being the first cases reported in this country except in the South.

Prevalence.—In 1909 Drs. Lavinder, Williams and Babcock estimated that there were approximately 1,200 cases scattered throughout thirteen different states. Of these there were 130 well recognized cases at Peoria, with 100 other probable cases. Dr. Hyde says that Dr. Kerr estimates there were 5,000 pellagrins in the United States in 1909. Hyde says that the prevalence of the disease in Europe may be estimated to some extent by its ravages in Italy, which seems to have suffered to a larger extent than any other country. For example, in Lombardy alone from the year 1770 to 1880, the number of pellagrins increased from 20,000 to 104,067, this being one in nineteen of the inhabitants. Sandwith estimates that over 36 per cent. of the Egyptian peasantry are affected. In some districts he says it is as low as 15 per cent. and in others as high as 62 per cent., where it is very common among the children, many cases occurring between the ages of 10 and 15 years.

Corn and Pellagra.—Just when corn as an article of diet began to be associated with pellagra in the relationship of cause and effect is not definitely known. Casal seems to have had some idea of it, and in 1810 Marzari definitely stated that Indian corn was the cause of the disease. When this idea was overthrown, Ballardini advanced the idea of *spoiled* corn as the cause. Lombroso developed this idea broadly, and the adherents of the idea of spoiled corn as a cause are known as Zeists, while those who deny this relationship, notably the French school, are known as anti-Zeists. The Zeistic school has a number of factions or classes, each representing a modification of the maize theory. The first two of these seem to have been rather effectually discredited; they are, briefly, that corn is wanting in proper nutritive value, and that sound corn contains certain toxic substances which cause pellagra. The third is the toxico-infective theory that from spoiled corn certain toxic substances are *formed within the body.*

The fourth is the toxico-chemical idea that under the influence of parasitic growths, bacteria or molds, corn may undergo certain changes with the formation of one or more chemical toxins, and this is doubtless the most popular of all the phases of the maize theory.

The fifth theory is that pallagra is a specific infection derived from corn, either a mold or a bacterium, and many parasites have been named by Ballardini, Pari, Carraroli, Ceni, and Tizzoni.

Lastly, there is the interesting theory of Sambon, based largely on analogical arguments, that pellagra might be due to some protozoon, a theory which has been heartily approved by Manson. Aside from corn as

an etiologic factor, it seems to be established that the actinic rays of the sun have some possibly remote bearing on the etiology, but a distant bearing upon the characteristic cutaneous manifestations of a paroxysmal or seasonal nature. Its association with poverty has always been noted, and the influence of contaminated drinking water, capable of causing intestinal lesions which may open up avenues of infection, has been pointed out. The influence of poverty, unsanitary surroundings, depressing diseases, alcoholism, malaria, hookworm, and other intestinal parasites, and everything which lowers vitality and lessens resistance is equally well known.

Sandwith says:

> It is not good maize or good maize flour which produces pellagra—the disease requires for its production the habitual use of damaged maize in some form. . . . There is now a considerable consensus of opinion in favor of incriminating *penicillium glaucum* in ordinary pellagra. In districts where no maize is cultivated or habitually eaten, pellagra does not exist. . . . The maize area is infinitely larger than the pellagra area. This is not the point. The question is, does the pellagra distribution correspond very nearly with the areas upon which human beings live who eat damaged maize or products from damaged maize?

J. W. Kerr, Assistant Surgeon General, U. S. Public Health and Marine Hospital Service, says:[4]

> The belief that there is some relation between pellagra and the use of corn would seem too universal and too profound to permit of rejection except in the case of demonstrative proof to the contrary. The exact nature of the relation awaits final solution.

Dr. R. G. White shows[5] that patients in the Serum Institute on the hospital diet would show improvement, but when they were fed the durra bread prepared from corn meal by the native women in the usual way, they would show rapid and marked changes, apparently in the nature of a toxemia, with a return of diarrhea, loss in weight, dull, listless appearance, with clay color of skin but no return of the rash. White concludes his article by saying:

> Judging from the work so far done, one feels justified in saying that at least damaged maize, as found in some of the villages, and presumably used as food purposes by the poorer fellaheen, seems to cause a condition of the nature of toxemia. Whether it is due to some poison elaborated by a fungous growth in the durra grain or to the fungus itself, only further research can decide.

One of the most interesting papers I have studied in this connection is that of Dr. George F. Gaumer, of Yucatan.[6] He relates that while isolated cases may possibly have existed in Yucatan at an earlier date, it became epidemic in 1884. In 1882 the grasshoppers destroyed all cultivated plants and were especially destructive of the corn. Corn is the only cereal used in Yucatan for the making of bread, and famine seemed inevitable until the merchants began to import corn from the United States. The imported corn was brought from New York in the bottoms of vessels as ballast; during the voyage it often became damp and some-

4. Report of South Carolina State Board of Health, 1909.
5. Pellagra in Egypt; Ibid, 1909.
6. Gaumer, George F.: Pellagra in Yucatan, Report of South Carolina State Board of Health, 1909.

times wet, and from careless handling, bad storage, with the heat and humidity, a peculiar fungus developed which he calls *sporisorium maidis*, and that "the constant eating of corn affected with this fungus produces a vitiated state of blood which leads to the slow development of pellagra."

This spoiled corn was consumed chiefly by the middle and lower classes, and they suffered most from the disease; while among the better classes who were able to buy up all the corn produced at home, the disease seldom made its appearance.

This importation of corn continued until 1891, when the country had recovered from the devastation of the grasshoppers and locusts. From 1891 to 1901 no more corn was imported, enough being produced in the states for home consumption. *During this period no new cases of pellagra developed,* while the old cases ran their course, and all died. From 1901 to 1907 the corn crop of Yucatan was almost a total failure, and again corn was imported from the United States, now coming chiefly from New Orleans and Mobile, some coming about the same distance from Mexico, coming by water. At this time the prices paid for hemp were very high and consequently it was more profitable to raise hemp than corn even for home consumption, thus compelling even the well-to-do to use the imported article. Pellagra again spread rapidly among both rich and poor, so that in six years about 10 per cent. of all the inhabitants became victims of the disease, and at the present time fully 8 per cent. of all the people of Yucatan have pellagra.

Dr. J. F. Siler, Captain Medical Corps, U. S. Army, says, concerning the etiology:[7]

> A study of the literature of pellagra reveals the fact that not only is the etiology an unknown quantity, but the clinical picture of the disease is a most variable and changeable one.

Dr. C. W. G. Rohrer, Medical Assistant to the State Board of Health of Maryland, says:[8]

> Today it is pretty generally conceded that pellagra is caused by the *aspergillus fumigatus*. Some of the fall cases may be due to the *aspergillus flavescens*.

Dr. Rohrer also calls attention to what I think is of very great importance, a hitherto overlooked factor in the causation of pellagra, the harvesting of corn by machinery. During the hot weather, and before the corn is fully ripe, the corn is cut and bound into tight bundles by the corn harvester, and often lies for days on the damp ground, and these conditions he says favor the growth of the *aspergillus fumigatus*.

Dr. D. J. Williams, Medical Superintendent of the Asylum, Kingston, Jamaica, says:[9]

> I excluded corn meal in every form from the inmates' diet for twelve months, but as I found that the cases admitted to our wards after the exclusion of the corn meal from the diet suffered from the disease, I am not prepared to admit that maize or Indian corn is the only cause of this condition, *in fact, I wish to record my opinion that Indian corn, damaged or otherwise, is not the sole cause of pellagra.*

7. Report South Carolina State Board of Health.
8. Ibid, 1909.
9. Ibid, p. 230.

Dr. J. W. Moberly[10] gives it as his opinion that:

> The cause of pellagra will probably be found in both general and specific factors. To just what extent, if at all, they operate together, I am unable to say. The various clinical aspects of the disease, however, would justify us in considering its etiology under several headings.

He discusses Lombroso's theory that a fungus growing upon corn produces a toxin which is the cause of the disease, points out the fact that the specific fungus which grows upon corn will also grow upon cheese, and cites Brown and Low's case occurring in a shop woman from the eating of raw oatmeal and rice. He then goes on to discuss the question of the toxin of a specific organism operating only in the presence of a peculiar morbid predisposition or racial peculiarity, and also says:

> Considering the fact that pellagra is a chronic progressive disease, considering the fact of its frequent association with syphilis and tuberculosis; and considering the relationship of syphilis to certain chronic nervous diseases, as paresis and tabes, are we not justified in suspecting the existence of a morbid and etiologic equivalent in the three conditions?

He also considers intestinal parasites as contributing causes.

Dr. J. M. King, of Nashville, Tenn., reported to the National Pellagra Conference at Columbia, South Carolina, in 1909, cases in which he thinks there was evidence of a probable direct transmission of the disease to a woman from washing clothes of a pellagrous patient. This opinion was also expressed by Dr. W. E. Hibbitt, of Nashville, in the discussion of Dr. King's paper.

Dr. Walter H. Buhlig[11] gives a brief report of his studies of the Gram stains of the feces of 20 pellagrins at the laboratory of the Illinois State Board of Health at Peoria, and reports the almost universal presence of the *bacillus bifidus,* pointing out the difficulty of interpreting the exact significance of this finding and calling attention to Kendall's observation concerning the tendency to increase in this organism where the diet is poor in protein and rich in easily fermentable carbohydrates such as obtains among the pellagrins at the hospital at Peoria.

Dr. J. H. Taylor favors the protozoal theory, and points out[12] the analogies between pellagra, syphilis and sleeping sickness, as to type, remissions, similarity in skin lesions and lesions of the central nervous system, pathology and treatment, but admits that there is "some intangible relationship between corn, especially spoiled corn, and the development of the disease."

Dr. J. W. Moberly's suggestion of an etiologic equivalent in pellagra and syphilis, is met by the statement of Dr. Howard Fox, of New York,[13] who has reported the results of the Wassermann test in thirty cases and gives it as his opinion that "Cases of pellagra do not often give a positive Wassermann reaction," and, "reaction when present, is generally

10. Ibid, p. 260.
11. October, 1909, Bulletin of the Illinois State Board of Health, and March, 1910, Bulletin of the Medical Department of Northwestern University.
12. Report South Carolina State Board of Health, 1909, p. 309.
13. Ibid, p. 275.

weak, and the value of the Wassermann test is not affected by the findings in pellagra."

Objections to Lombroso's Zeitoxic theory.—Ferni holds that in Egypt pellagra is not related to the use of moldy corn. Ceni describes pellagra among people who eat no corn. In Lombroso's experiment upon twelve human beings fed with corn spoiled by *penicillium glaucum*, there were absolutely no symmetrical skin lesions nor the slightest tendency to periodicity, both regarded strikingly characteristic phenomena. The cultivation and extensive use of corn in Italy antedates the appearance of pellagra by nearly two hundred years. There are extensive regions to-day where pellagra is widespread, but where corn is neither grown nor eaten. J. H. Taylor cites the province of Vodjoz, Spain, where pellagra is endemic, though the inhabitants eat no maize; and also the province of Ovido once ravaged by pellagra, but in 1900 it suffered least, though no changes had taken place in the culture, storage, preparation, or quantity of corn eaten, while Madrid, where it is only seldom used as food, suffered severely.

Williams, already quoted, excluded corn meal and every form of corn from the diet of the inmates of the asylum at Kingston, Jamaica, for twelve months, but found the cases admitted to the wards suffered from the disease.

In 1903 Garbini identified several cases of undoubted pellagra at Messina Asylum, in natives of Sicily, where maize is not cultivated, and where they had been inmates of the institution for a long time and had eaten no maize for years prior to the appearance of erythema.

Why should there be 20,000 cases among the five millions of Roumanian peasants and a few hundred only among the 80,000,000 of the United States, and these only within a very few years?

Taylor states scarcely 25 per cent. of the cases of Lombroso and Babes and Sion can be shown to be in the habit of eating spoiled corn.

In August, 1909, after pellagra was definitely diagnosed at Peoria, Dr. Walter H. Buhlig, of Northwestern University, made a careful study of the cases at Peoria, under the auspices of the Illinois State Board of Health, these investigations having to do especially with the etiology of the disease. He made a special study of the blood, urine, feces, the bacteriology of the stomatitis, and bacteriologic analyses of the drinking water, cultures of the corn, and study of the dietary.[14] He concludes that the urine is not diagnostic, but corresponds to what one would expect in this class of cases; that the anemia is secondary; that in practically all the cases where direct smears are made, the spirochetes and spindle-shaped bacilli so common to ulcerative conditions in the mouth and throat were discovered, and that they are probably secondary to the actual causative agent of the ulcerations. An interesting fact was noted, namely, that many bacilli of the colon type were seen. Amebæ and flagellates found in the water he believes to be non-pathogenic, because of absence of dysentery among the inmates, the absence of liver abscess and the finding of the same organisms in other places where there was no

14. Bulletin Illinois State Board of Health, October, 1909.

sickness, and the further fact that amebæ never produce the symptoms of pellagra.

In the examination of the feces a large sluggishly motile gram positive bacillus was found in great abundance, and animal experiments have been started with it. This same organism was obtained from cultures of moldy No. 3 corn. Cultures from the hominy and the mush of the institution were sterile.

Captains J. F. Siler and H. J. Nichols, of the United States Army, charted and carefully investigated 100 cases at the Peoria Hospital and their report is published in the October, 1909, Bulletin of the Illinois State Board of Health. I include only the summary of that report, which is as follows:

1. Of 2,150 inmates at the Peoria institution, the majority of whom have been almshouse and asylum inmates for many years, 175 were pellagrous during the summer of 1909. No physicians, attendants or employees were affected.

2. About 70 per cent. of cases had suffered from previous attacks and pellagra has been prevalent at least four years.

3. The average age of cases was 50 years; the sex distribution was about equal.

4. Attacks were mild (skin symptoms, mild digestive tract symptoms without constitutional reaction) and severe (marked skin and digestive tract symptoms with pronounced toxemia).

5. A diagnosis of pellagra is not warranted in absence of skin symptoms. The symmetry of skin lesions was a most striking feature. When blood formation occurred the death rate was high.

6. Digestive tract symptoms were not present in all cases. In some cases diarrhea and stomatitis could be attributed to bad teeth and infection with amebæ and flagellates, but in other cases, the constitutional symptoms pointed to some additional specific poison.

7. Patellar and plantar reflexes were abnormal in about three-fourths of the cases, usually increased.

8. It was impossible to determine the exact extent of mental disturbance attributable to pellagra, as all patients were insane before the disease was recognized. The case develops no suicidal tendencies.

9. Mild case recovered without therapeutic aid. Severe cases were not much benefited by Fowler's solution, atoxyl or thyroid tablets.

10. Feces; 84.8 per cent. of the cases showed protozoal infection (amebæ, flagellate and encysted forms). These protozoal infections account in part for the intestinal symptoms and are believed to be a predisposing factor.

11. In 18 autopsies, well marked ulcerations of the colon were found in 12 cases, and folliculitis occurred in all. No other organ showed any constant or striking alteration.

12. Cultures of blood, spinal fluid and of spleen pulp were uniformly negative.

13. The disease impressed us as an intoxication rather than an infection.

14. Not more than two ounces of corn were eaten per day; no evidence was obtained of the use of spoiled corn.

15. The possibility of an intoxication from bacterial action on corn products in a damaged intestine is considered the most promising field for study.

To add other opinions and quote other authors would add to the confusion and increase the differences of opinion. It must be frankly admitted that the cause of pellagra is unknown. On the other hand, there seems to be some relationship between spoiled corn and the disease, and the question of the modern method of harvesting the corn before fully ripe seems to be an important and practical one.

Diagnosis Symptoms.—At the outset, it might be well to recall that the epidermis and the epidermic tissues, the mucous membrane of the mouth and also the nervous system, are all epiblastic in origin.

The symptoms of pellagra are in a general way the expression of morbid conditions in one or all of these systems, and there seems to be a close relationship and interchangeability of symptoms between the skin and the mucous membranes and it is quite possible the histogenesis of these tissues may offer an explanation of this triad of symptoms, the etiologic factor having a special predilection for epiblastic structures.

Dr. J. W. Babcock, of Columbia, S. C., emphasizes the fact[15] that in the London School of Tropical Medicine, the students are taught that they must make a diagnosis of pellagra regardless of dermatitis, that they must make a diagnosis without waiting for the skin manifestations to develop; in other words, to make a diagnosis before the skin lesions develop, as it is in this stage of disease that we are able to be of greatest benefit to the patient. When the case reaches the asylum stage, with marked dermal changes, especially if they occur without solar influences, the curable stage has probably long since passed. The early changes are marked diarrhea, mental symptoms, exaggerated knee jerk, but without skin manifestations.

Capt. H. J. Nichols, U. S. Army, thinks that:

> For scientific purposes in the study of our cases, we ought to eliminate those which do not show skin symptoms. It may occasionally be necessary to diagnose pellagra without skin symptoms, but it is not safe at this stage of our knowledge of this disease.

Speaking on this point, Hyde says:

> The cutaneous symptoms have not only given to pellagra its most commonly employed designation, but further, have furnished its most constant and determinate feature. It is possible that there may be a *pellagra sine pellagra*, but few clinicians would venture to make a diagnosis of this sort in any sporadic case beyond the limits of a pellagrous district.

Prodromal Symptoms.—When it is recalled that the cause is unknown, that it is probably always a chronic disease, frequently having associated with it the pathologic changes incident to other diseases, and because there are no published accounts of thorough, complete post-mortem examinations of uncomplicated cases, in the early stages, especially the microscopic changes in the central nervous system as revealed by modern methods, and that even the initial symptoms of the typical cases are not matters of agreement among observers, it is apparent that the question of prodromal symptoms is a difficult one to solve.

McConnell says[16] that "the slower developing cases usually present the symptoms of salivation, burning in the stomach and diarrhea twelve months before the rash appears."

Harris says[17] that he "has no hesitation in predicting the future will show that the initial changes are in the central nervous system," and if

15. Report South Carolina State Board of Health, 1909, p. 270.
16. Ibid, p. 325.
17. Ibid.

this is correct, then the prodromal symptoms would be manifestations of the action of the poison upon this system.

Dr. Lavinder says:[18]

> The prodromal stage of pellagra is seldom noticed; it is often passed over by the patient, because the symptoms are not severe and because it occurs among a class of people who do not complain; it is usually vague, but may be marked, and may last many months. It is characterized by lassitude, headache, some pain in the stomach, digestive disturbances, perhaps a little muscular weakness, and these may continue for some time. They may continue an indefinite time, say a month or two, or a year or two.

On this point Hyde says.[19]

> The question of a distinct prodromal period introduces at once to the confusion which has prevailed respecting many features of the disorder. By some it is believed that year after year, before the first unmistakable symptoms are betrayed, the patient experiences an increasing sensation of languor and of general malaise. It is clear, however, that even in the class of subjects who tolerate minor ailments with relative equanimity, in the early spring season of the year, there is experienced an unwonted lassitude, vertigo, epigastric pain, bowel looseness and inappetence.

At the same time there may be coated tongue, prominent papillæ, even ulceration accompanied by headache and vomiting.

A recognition of the earliest clinical manifestations is of importance in arriving at an early diagnosis. Dr. C. W. G. Rohrer[20] says that "the gastro-intestinal derangement is usually the *initial symptom of the disease.*" He describes dyspepsia, diarrhea and stomatitis as the cardinal symptoms referable to the alimentary canal:

Dr. George T. Gaumer, of Yucatan,[21] describes the initial symptoms as:

> A sensation of heat in the mouth, throat and stomach upon the exhalation of breath; taste is impaired; there is anorexia and frequently ptyalism, with a broad flabby tongue irregularly marked by red blotches, a peculiar formication in the extremities which often extends very gradually to the whole body.

E. H. McConnell, of Chester, S. C., thinks the stomatitis salivation, burning in the stomach, and diarrhea, may precede the skin manifestation by twelve months, and thinks that the intestine and stomach are the primal foci.

Erythema—First Stage.—After a variable indefinite period of time, usually in the springtime, the characteristic erythema or exanthem suddenly appears and what is commonly described as the first stage is entered. At this time the gastro-intestinal symptoms predominate, and there may be vague pains, vertigo, muscular weakness, especially of the lower extremities, and the deep tendon reflexes may be exaggerated.

The cutaneous manifestations are usually periodical in their manifestations, symmetrical, bilateral, and confined largely to those parts not covered by clothing, such as the hands, face, neck, and the feet and legs. The eruptions on the face may be symmetrical and involve the whole face, the so-called "pellagrous mask," or it may involve the prominent

18. Illinois Medical Journal, January, 1910, p. 54.
19. Hyde: "Pellagra and Some of Its Problems," p. 4.
20. Report South Carolina State Board of Health, 1909, p. 216.
21. Ibid, p. 223.

portions of the nose, cheeks, chin, and ears, or the cheeks alone may be involved, to the exclusion of other parts of the face. The circlet about the neck, the "collare pellagroso" of Casal, is characteristic, and usually represents the limits of the clothing worn about the neck. If the shirt be open in front, then the eruption may extend well down upon the sternum.

In nearly all cases the cutaneous manifestations appear on the dorsum of the hands and the location and symmetry of these lesions are among the most characteristic manifestations of the disease. For example, in the cases observed by Siler and Nichols at the Peoria State Hospital, this bilateral symmetrical involvement of the dorsum of the hands, neck and forearms was noted in 97 out of 100 cases. The eruption may involve only the dorsal surface of the hands and forearms, this being true in over one-third of the cases, but it may appear on the front of the forearms and may encircle the wrist. Involvement of the palmar surfaces of the hands is slight and rare. The extent of involvement of the feet depends on their exposure to the rays of the sun. The so-called "pellagrous boot" is common in the South and in warm countries where the feet are not covered.

Deviations from the symmetrical type are not uncommon and Neusser reports cases where the whole body was exposed to the sunlight, the face, feet and hands only showing the characteristic eruption. Occasionally the shoulders or the genital organs are involved.

Color of Skin.—Siler and Nichols describe the color as at first "a bright red erythema, gradually assuming a darker shade, and after a few days, a characteristic purplish dusky red color, and occasionally the skin lesions would show a greenish bronze cast."

Dr. Hyde says:

> The hue of the exanthem differs according to the color scheme of the subject and the length of time during which it has existed. At first the color is dull red, which has been likened to the appearance of the skin after a common sunburn; yet it is rare that the pinkish hue produced by the rays of the sun in the skin of a blonde subject is precisely imitated. The pellagrous erythema at the outset, generally fading under pressure, is more reddish than pinkish, displayed at times with discrete macules which speedily fuse and produce on the backs of the hands, for example, a uniformly smooth, reddened and distinctly outlined area, suggesting, when the cuffs have definitely limited the efflorescence above, the appearance of a glove covering the back of the hand. Later the color deepens, becomes reddish brown, chocolate or plum color, "livid bluish."

These eruptive symptoms may disappear in two weeks, leaving a pigmentation, the extent and severity of which corresponds to the severity of the involvement.

During this time there is often intense itching and burning, and Gaumer, of Yucatan, says the itching and burning become "almost intolerable," and that if scratching be resorted to, the burning that follows is "almost unendurable," and these symptoms with the coincident mental derangement, often lead to suicide. At this time the strength fails, the reflexes are exaggerated, the movements are incoordinate, sleep is dis-

turbed by hallucinations and dreams, the mind weakens and wanders, and the patient may carry on an almost constant conversation with himself or with some imaginary person.

While the disease is usually described in stages, this is merely an arbitrary division designed to facilitate our thinking about the matter, and one stage merges into the next without any clearly defined limits. In the so-called second stage, the cerebrospinal symptoms become predominant. The muscular weakness is greater, motor disturbances are more marked, there may be partial paralysis, spastic or ataxic gait, tremor of the hands, retraction of the head simulating meningitis, or epileptiform convulsions may occur. At this time the itching and burning becomes increased, the gastrointestinal symptoms become more pronounced, fleeting fugacious pains occur, deep tendon reflexes may be increased, diminished or lost. There may be vasomotor disturbances, disturbances of vision, together with marked psychic disturbances. Ocular symptoms are shown by Siler, Watson and Welton to consist of inequality of the pupils, conjunctivitis, retinitis, inflammation of the optic nerve, choroiditis, and photophobia. There is an absence of fever. The blood findings are not diagnostic. There is diminished hydrochloric acid in the gastric juice.

The terminal stage marasmus increases, all the gastrointestinal symptoms become aggravated, weakness is greater, there may be ulceration of the mouth, diarrhea or dysentery, bed sores develop, dropsy occurs, all the symptoms become aggravated, the patient grows weaker and weaker, and death closes the scene.

Suicide.—Dr. George F. Gaumer, of Yucatan, says attempt at suicide is common, because of the intense itching and burning of the skin, which racks the nervous system. In Egypt, even in the second stages of the disease, walking automatism is a frequent cause of innocent suicide by precipitation or submersion in the canals of the Nile, and because fear of impending danger often makes the patient flee from home. The psychosis is usually of a melancholic type tending to make the patient cowardly and rarely becoming aggressive.

Duration.—The disease may last a few months only, or it may, according to Lavinder, continue for 25 or 30 years. Of the 100 cases charted and studied by Captain Siler at Peoria in the summer of 1909, 51 were reported dead on May 11, 1910. Hyde estimates the mortality in the United States at 35 per cent.

Prognosis.—A severe glossitis with ulceration of the tongue and buccal mucosa, with profuse secretion of saliva, is of grave prognostic import, and patients presenting such severe symptoms seldom recover.[22] While the dysentery which often accompanies pellagra is often to be attributed to factors other than the pellagra itself, when present and severe it is of grave prognostic import, as these cases, according to Siler, show a profound intoxication and physical failure is rapid and marked. The finding of marked eye changes adds to the gravity of the prognosis, and in a large percentage of cases indicates an early fatal termination.

22. Capt. J. F. Siler, U. S. Army.

Gaumer says that "after mental phenomena have made their appearance, the disease becomes incurable." The occurrence of the rash, and especially of bullæ in the winter, is indicative of profound toxemia and is usually associated with the moribund state.[23]

DISCUSSION

Dr. Lewis J. Pollock, Dunning:—Mr. President and Members of the Society: The literature on the subject of pellagra is so extensive, and has been covered so well in Dr. Webster's paper, that I shall only touch on a few points in connection with the subject.

Relative to the non-zeistic theory of pellagra, Sambon has called our attention to the fact that he thinks the disease is transmitted through the tick. Along this line it may be well to state that all investigators who have found organisms which they thought were the cause of pellagra have found, each one of them, an organism peculiar to their own inclination. Ceni, it may be recalled, reported four different causes of pellagra within a short time.

As to the question of pellagra *sine* pellagra, it is a difficult thing to recognize pellagra without the skin lesion, which is its characteristic symptom. I recall a case that occurred at the Cook County Institutions, which proved to be one of pellagra *sine* pellagra. At the time the diagnosis was made the skin lesion did not appear. The patient was a woman, 38 years of age, who developed a certain hebetude, staggering gait, melancholia, long crying spells, complained of dizziness, developed diarrhea and sore mouth. She did not have roughness of the skin. Lumbar puncture was made, as was also a Wassermann reaction, which was negative, and I made a diagnosis of pellagra *sine* pellagra. The diarrhea increased, and upon longer exposure to the sun she developed a symmetrical dermatitis, which was marked by roughness on the dorsum of both hands some two months after the onset. She was treated with transfusion of blood from the case of a recovered pellagrin, which was carried out in accordance with the Crile technic, but she died. The influence of the sun is very well seen in many cases, especially in those who come to you with a lesion on one side. They will come to you with a lesion upon the dorsum of the hand on one side, and the other side, after being exposed some two or three weeks, will develop a skin lesion.

As to the prognosis, in the United States it is bad, on account of the number of acute exacerbations of the chronic illness which we get, and Lavinder has put the mortality as high as 67 per cent. At the Cook County Institutions, of forty-two cases, thirty-seven had died.

The question of the relation of insanity to pellagra is raised frequently. Some consider all pellagra patients insane; while in the United States we find most of the cases among the insane. Yet many of these patients suffer from other psychoses such as dementia paralytica, etc. In Italy it is said that 10 per cent. of the pellagrins become insane, so that all pellagrous patients are not insane, and the number of insane pellagrins in the United States is accounted for very largely, because they have arisen in institutions.

As to the treatment of the disease, all medicinal treatment so far has been of little avail. Arsenical preparations, especially the new one, atoxyl, although vaunted as a cure for pellagra, has been found by experience to be of little or no avail. The serum treatment of pellagra will undoubtedly yield the best results. Several Italian workers have done some work along this line. Gatti has treated two cases of pellagra with a serum, with excellent results, as have Antonini and Mariani. Babes has made an antiserum from a horse with which he has treated cases of pellagra. Cole and Winthrop have resorted to transfusions in eleven cases of pellagra from patients who have been cured of the disease, with good results.

---

23. Mobley.

Dr. Everett J. Brown, Decatur:—Up to the present time pellagra is only interesting from an institutional standpoint and south of Mason and Dixon's line. The question occurred to me whether I had ever seen a case of pellagra in twenty years' practice. Dr. Zeller tells me that only two cases have been reported in Illinois outside of institutions. One of these was a former inmate of the institution. I went to Peoria and studied these cases of pellagra with Dr. Zeller, and saw quite a number of them, and he tells me that the nurses and attendants ate the same food as the patients, but had not contracted the disease. I asked Dr. Zeller to give the distribution of the disease in Illinois, and it seems that in Bartonville, near Peoria, they have had cases for years among the chronically insane or dements. My especial interest in studying these cases in Peoria was that I thought I had discovered a case in Macon County, and I still believe I have a case. I have not reported it yet because I wanted to be certain of my diagnosis. A man, aged 55 years, came to me with a skin lesion on the dorsum of both hands extending up to the cuff line. Over the backs of both hands were blebs. I went into the history of the case quite thoroughly. I have not told the patient that he has pellagra, nor anybody except a few of my confrères in practice. The public are easily alarmed over this disease. I kept the patient under observation for five weeks. Besides the blebs and dermatitis on the dorsum of both hands and wrists, he had dermatitis on the forehead, with some blebs and on the back of the neck. I gave the patient no treatment. He is in a quiescent stage now, and I shall expect later to see a return of the trouble, as it is intermittent in character. He has had intermittent gastro-intestinal disorders. I recall treating the man for several years at intervals for gastro-intestinal disturbances.

The discovery of pellagra in Illinois is one of the most dramatic things that has ever occurred. Many of you will recall that some of the patients from these institutions were reported as having been scalded and direct charges were brought against the authorities. In one institution two nurses were discharged for having scalded patients in bath tubs. These patients had all the appearances of having had their hands and feet scalded; but later pellagra was diagnosed in these cases, and fortunately these nurses were reinstated after having been discharged. The veil was lifted in one day. One day there was no pellagra; the next day there were forty or fifty cases. It was surely one of the most dramatic things in the history of medicine in Illinois.

Dr. Eugen Cohn, Anna:—I have been connected officially with the Peoria State Institution only a few weeks and I must confess that I, as yet, know very little about pellagra. The present knowledge of its etiology, however, is probably very far from being as extensive as could be desired. In my very limited experience I have attempted as carefuly as I could to follow the clinical life of those patients who are there now, and the post-mortem findings of those who have since died. What has interested me more particularly thus far is the sameness of the lesions found in the gastrointestinal system. I have often asked myself the question whether the lesions which I observed in the cases that came to autopsy, namely, ulcerations to a greater or less extent in the colon, cecum and sometimes in the ilium, were a part of the disease or whether they were independent thereof. We have also found in all these necropsies atrophy of the intestinal walls. It was demonstrated before death in some cases which had unmistakable skin lesions of pellagra, living amebæ, within the discharges from the bowels, and on post-mortem amebæ within the ulcers of the colon; in one case a typical hepatic abscess was found, and the question arises did these cases have amebic dysentery independently of that disease or were the intestinal trouble and lesions a part of the disease? The connection between the two, if any exists, interests me greatly. One other point which impresses me forcibly is that in the living, senile appearances were far more marked than one would expect, taking the age of the patient into consideration and autopsy revealed in the same cases corresponding senile changes within the vital organs and vessels, viz., the pellagrin of say 45 years presented kidneys, myocardium, vessels, etc., normal to the man of 70 or 75.

SOME DIABETIC OBITER DICTA.*

S. T. Robinson, A.B., M.D.
EDWARDSVILLE, ILL.

Mr. Chairman and Ladies and Gentlemen:—Of late our profession is being characterized as one whose chief function ultimately will be prevention rather than cure. Already, indeed, this status has been reached to some extent, and to-day what our art lacks in the one resource it is rapidly gaining in the other. Many of the infections are now understood, and where no specific remedy has been discovered sanitary prophylaxis alone can often abort the morbid field. Yellow fever is a notable example.

This magic touch, however, deals with the extrinsic causes of disease. As the house fly, the mosquito, and their congeners are studied—as all the pollutions of air, food, and water, are bared; in other words, as great pathologic secrets are uncovered, one factor in mortality shrinks amazingly. In short, the premise to-day is that, through these marvelous revelations, the average of human life, with decrease of pain, with greater efficiency of labor and consequent increase of happiness, will be wonderfully extended. And of such is the glory of medicine.

This picture, so alluring, has nevertheless a reverse side; for if infection yields, many other perils remain. Largely they come of the increasing demands upon the race, of its need of sudden adaptations, its inevitable fatigue, its indulgences; and as wealth and luxury accumulate we slip away from the natural life. Here, then, are modern currents, with immediate influence on our art, that may not be ignored. Here, in large part, lie the origin and pathogenesis of many of the morbid conditions that to-day are forming an increasing percentage of a changing situation. And if the older diseases of germ origin are now less aggressive, this other class of ailments still remains refractory.

Thus, what progress has the medical treatment of diabetes made in the last thirty years? To-day, what do our medicinal resources amount to? Perhaps, if one reads the picturesque brochures of proprietary medicine, a very young and unsophisticated physician may possibly be deceived temporarily by their extravagant claims. As for the patient himself, he is readily trapped until time, his most precious asset, has been frittered away. Turning, however, from this *ignis fatuus* of commercialism to the standard authors on diabetes: to von Noorden, to Pavy, and to Tyson, what do they confess? That the disease is still a mystery, that our knowledge of it is still, for the most part, rudimentary. Of actual curative treatment there is that hoary old medical paradox of a multitude of remedies which, on closer approach, resolve themselves into so many broken hopes. In other words, we are still in the therapeutic cul-de-sac of our fathers. Opium and its derivatives, antipyrin, arsenic, mercury rarely, possibly jambul, of late atropin, and not omitting electricity or organotherapy, such are the usual remedies, each with many restrictions and limitations. These, and the numerous failures that occur, sufficiently

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

stamp the drug treatment of diabetes. Its employment involves no principle, no pathologic law, and is always symptomatic and empirical. In a word, of diabetes as of cancer, we know little that is final; as yet, its chief facts are largely collateral. Its etiology is uncertain, its pathology obscure, its development often larvated, its medical treatment always groping. Can we, then, assist these patients?

Yes! we are by no means helpless. If to-day there is no proved drug remedy, we nevertheless stand on solid rock. Let us not forget that drugs are sometimes our least important agents. The reverse is the superficial view, the popular view, with the value popular views often possess. In fact, our assertion should never hesitate that diabetes, if yet lacking a specific cure, is often quite tractable. Too much harm has already been done by a nihilism that can end, on the one hand, only in unjust professional abasement, on the other in the rise of faddists. In such an unfortunate atmosphere the materia medica easily becomes the practitioner's land's end, and in its mists he may easily forget that a true therapy is as versatile as it is never hopeless. With the consciousness, then, of growing power, let us first debar nihilism.

Next, an early diagnosis is the greatest service we can do the patient. In this platitude everyone will at once concur. But is an early diagnosis usually made? Is it ever easy, or always possible? A glycosuria, you know, does not necessarily mean diabetes, though it must mean danger. There are often some fine differentiations, and these at a period when differentiation may be difficult. Moreover, how many men will test unceasingly in order not to miss the occasional case? As a fact, the early stages are often lost. Not only does this occur through the ordinary sources of error, but the chief symptoms, as already stated, are sometimes larvated, oftener intermittent; and inasmuch as it is precisely in these cases that we may be of most service, an early diagnosis becomes just as imperative as it is in tuberculosis. I have seen diabetes mistaken for arteriosclerosis, for malaria, for rheumatism, for phthisis, for neuritis; and in each one of these cases the revelation on testing was unmistakable. Such instances suffice to show how the hasty or cocksure practitioner can fail at a critical time; later on the opportunity of greatest good has perhaps been wholly lost. Early diagnosis, then, is the first requirement in diabetes; as a consequence, the routine tests are essential.

What does that master, von Noorden, tell us here? *"When we consider how secretly the disease develops, and how much more frequently it occurs than used to be imagined, it is the duty of the physician to examine more frequently than is now the custom the urine of people entrusted to his care."* Contrast this advice with that given in a well known book entitled "The Physician Himself." Here the author explicitly warns young physicians against such a habit, and of the danger he thinks is thereby incurred. Beyond doubt, this advice has been responsible for many errors. Happily, that day in medicine has passed. The Baltimore dictum may, therefore, be safely left to its own inanition; the von Noorden dictum will live as long as the medical truth hunter lives!

In the pathology of diabetes I would briefly consider an obscure drift which as yet seems unrecognized. As a working hypothesis, then, which, so far as I can ascertain, has never been presented before, the following is offered: That diabetes is not, *per se*, a disease at all, but is purely a morbid condition, of the same general order as dropsy; and, like dropsy, is always the result of antecedent disease or injury, single or complex. As normal metabolism must proceed from many cells acting together, it is also conceivable that, under either toxic blight or perturbed innervation, these cells may first become embarrassed, next inactive, then dead, the transition being wholly individual, hence almost imperceptible at first. So are many other transitions in pathology. As an actual laboratory fact in the morbid anatomy of diabetes, both liver and pancreas show not only many dead cells, but an effort at their reproduction. One by one the loss is insignificant, but steadily continued it must result in a diminished aggregate of cell activity; and by just so much does the ingested carbohydrate reach the general circulation. Thus, in a broad survey, there is first an impaired or limping function, and as its contraction proceeds a condition results which is quite analogous to what is usually called paresis in other parts of the body. For the purposes of an hypothesis it seems entirely fair to employ here the term paresis; that its first cause may sometimes be distal (toxic blight), sometimes central (neurogenous), are wholly compatible facts; they are also closely analogous with what happens elsewhere. Or, paresis may become paralysis and end in complete obliteration of the function. Finally, the retrograde metabolism of the last stage, with autotoxic products, is but the logical conclusion of remaining nutritive elements working "full speed astern" in disintegrative processes.

It is impossible now, and hardly necessary, to discuss the metabolism of carbohydrates; perhaps the error which produces diabetes is still unlocated, though if any one has come near the secret that man, in my judgment, is Pavy, of London. It is enough to say here that in diabetes the normal process hesitates, then fails, as already outlined. With such failure there is a crude absorption of carbohydrate as glucose; or, in case of brain or nervous injury, the stored up glycogen is released as free glucose. In either case the resulting hyperglycemia, the accompanying toxemia, and the inevitable mal-nutrition, soon develop all the classical symptoms. On the other hand, in dropsy there is sustained first the loss or impairment of an essential element in normal equilibrium which, in its final analysis, is almost as obscure as that in diabetes. At once certain forces are so disturbed that the lymph current is more or less diverted, the processes it represents are morbidly employed, and dyspneas, anasarcas, and hydremias, result. In each case there is a progressive loss of cell activity, which in diabetes is nutritional, in dropsy is circulatory. In each the condition is secondary, but in diabetes it may appear so remotely from the first cause as to leave that factor in great obscurity. And if, in the sphere of pathology, dropsy and diabetes are antipodal, the fact may be regarded as rather confirmatory than otherwise; moreover, the closer the etiologic and clinical analogies of the two conditions are studied, the

more will diabetes, like dropsy, be regarded as an aftermath, and not as the original disease.

The hypothesis must, however, remain more or less speculative until further support is advanced; possibly, it may appeal to a better equipped student. Leaving now this field for another equally fascinating, let us glance at some of the principles of treatment. Of drugs there is little to add save that if the foregoing bit of clinical pathology were once accepted there might be more to say; but this, as Kipling would remark, is another story. Certainly, on the old medicinal lines much uncertainty and disappointment are still inevitable. For the present, accordingly, let us dismiss the subject of drug treatment. In the great field of dietetics, then, with its broad, hard fixed laws, with its subtleties, with its almost infinite niceties and elasticities, must the problem as yet be met, now as for many years past.

Much has been said concerning the risks of a complete deprivation of carbohydrate; namely, the ensuing acidosis, intoxication by the acetone bodies, and its ever present threat of coma. Very likely conservatism in this matter has been overdone, yet undoubtedly an abrupt and radical change of food is dangerous in many cases. How then, may we institute a strict diet, yet avoid this peril? The only safe course is a gradual limitation of carbohydrate. Thus, the patient's economy may be more or less gradually accustomed to the change, a very essential point. The rapidity of this accomplishment, another highly important item, will depend largely on the special case in hand, as well as upon the patient, his surroundings, and the physician's skill and tact. There is good ground for believing the plan to be effective, and far less risky than any other. In grave cases the oatmeal cure of von Noorden would eminently fill the indications, particularly in the beginning. Of course, if the diabetes is mild the danger may be small, though it should never be forgotten that coma, like neuritis, may develop in any case. In severe cases it is more to be feared. Hence, if there is merit in the plan of gradual limitation of carbohydrate, its most successful application should be found in this latter class of cases; and such seems to be the fact.

Unquestionably, tolerance of a proteid diet may often be established; certainly, it becomes a necessity if the patient is to be reclaimed. Once brought about, the strictest rules must be enforced either on a continuous or interrupted plan, as may be suitable at the time. Here I would add a word in favor of the much abused gluten flour. Pavy says the best now obtainable in England contains less than 10 per cent. of starch; in America, the Pure Gum Gluten people claim only 15 per cent. of free starch, and that in proteid they exceed the government's requirements. While their figures are by no means wholly satisfactory, and their statements not always lucid, it is impossible to deny that an improvement has been made. I have used glutten flour at times, and often find it useful in the early management while tolerance of a proteid diet is obtaining. If, as some think, a certain amount of carbohydrate is essential to the diabetic, then a food consisting largely of nitrogen compounds should come nearer filling the exact requirements than one of

almost pure starch. But the facts are, carbohydrate is not essential, tolerance of proteid is, and the gluten should serve only to make easier and safer the first stage of the diabetic's long and tiresome journey. At this time it may be used in varying degrees until the purpose of its use has been accomplished; then it should be set aside until the patient, having regained some tolerance of carbohydrate, has passed through the dietetic valley and is again on the ascent. Now its use may be resumed cautiously, as the case permits. But in the early dietetic strain, in selected cases, the gluten, with its high content of proteid, while giving both force and variety to the daily ration, affords at times a psychic support that must not be despised. The main thing is to gain a tolerance of proteid; this objective must never be lost. If, however, while such tolerance is sought, and gluten flour is manipulated to accomplish that end, the patient's glycosuria is thereby markedly increased, then the gluten must at once be manipulated out of his reach.

The situation is closely comparable to the induction of chloroform narcosis; and just as this is ordinarily safe, particularly in the absence of degeneration, so a severe diet can usually be safely borne in early diabetes. Healthy people, we know, have a vast resiliency in both matters. Arctic explorers have lived under the most trying circumstances on the crudest forms of proteid and fat. If, however, in administering chloroform, a rebellious first stage develops, or the narcosis suddenly deepens into the third stage, if the patient's vitality is low, if the anesthetist rushes a full inhaler, vaso-motor paralysis and sudden death may easily occur. Exactly the same result, in exactly comparable ways, may unexpectedly overwhelm the advanced diabetic who has crowded upon him without preparation an extreme diet. He sinks under the burden of a profound auto-intoxication in which he has been heedlessly plunged; or, perhaps, as will sometimes happen in chloroform narcosis even in skillful hands, a hidden weakness exists and coma appears despite all care.

We should bear these dietetic facts ever in mind: That while at the beginning of treatment the patient has intolerance of carbohydrate, so an abrupt and radical reversal of diet may produce intolerance also of proteid. Thus there will be a double intolerance and the trouble deepens. But it is wholly upon the establishment of a tolerance of proteid that success depends; for it is only after a more or less severe proteid diet that tolerance of carbohydrate will be regained. Hence, the first essential, after diagnosis, is to gain a tolerance of proteid, and by tolerance of proteid is meant, of course, the physiologic condition wherein the patient is free from alarming acetonuria and the substances usually called the acetone bodies. Once this has been accomplished his urine may begin to run sugar-free. If now, with tolerance of such a diet fully established, some weight is gained, he has made a distinct stride forward. Even more notable, if with the same diet, and a urine continuously sugar-free, there is secondarily some loss of flesh, he has made much greater progress, for it will be found that he can again assimilate an appreciable quantity of carbohydrate. In other words, he has now reached, in part at least, the state of the healthy man who is underfed,

and thus accordingly loses weight. This extremely interesting phase of the diabetic's recovery is clearly set forth in Pavy's work.

Such results are, however, seldom obtained by simply directing the patient to avoid sugar and starch, and to live mostly on meat, or by handing him a printed diet list. Too often, I imagine, this is about the only supervision given. To-day, a technique in this matter has developed that calls for much special training, and a study not only of foods but of individualized cooking; and for him who has not been initiated into the mysteries of a diabetic kitchen, the field is simply a *terra incognita,* an unknown world. Modern practice will more and more demand special preparation in such work; for not only is the diabetic technique elaborate and full of exacting conditions, but to win success it is as imperative as is any other technique. It is my belief that the most successful method of treatment will become, in part at least, institutional; and just as to-day the surgeon exacts a well appointed hospital for his operations, so the physician, who must guide and educate the diabetic through a maze of chemic, physiologic, and dietetic technique, will demand and receive the same helps.

DISCUSSION

Dr. R. T. Woodyatt, Evanston, Ill.:—There is a great deal of truth in Dr. Robinson's remarks about the state of our knowledge concerning diabetes. While I personally believe that this knowledge is deeper in some respects than that of any other known disease, still it does not include anything which will enable us to institute active measures for the purpose of wholesale prevention; nevertheless, it would be a mistake to say or to believe that there is no such thing as diabetic prophylaxis. If prophylactic measures, such as are now possible, were generally carried out in practice every day the mortality from diabetes would be materially reduced. Any one who has had the opportunity of observing diabetic cases closely, knows that certain ones, caught in their incipiency and treated rigidly, that is, made sugar-free and kept sugar-free absolutely unremittingly for months and years, may live the full span of life without a recurrence of any diabetic symptoms.

There is also a class of cases in which young adults develop a form of diabetes characterized by a rapid onset, severe glycosuria and even acidosis, with heavy loss of weight—symptoms which one would have to recognize as those of a so-called "severe" case. Such cases may nevertheless, under rigid treatment, undergo a transition into what would then have to be called a "mild" form of the disease, compatible with a long life, sugar-free, free from acidosis, and from all symptoms and inconveniences except those incident to the strict diabetic regimen. If such transitions can occur under timely treatment after a case has developed, how much more could we do if we were able to anticipate the occurrence of the diabetes, by diagnosing the tendency to the disease before it actually began. This can be practically done in this way: A practitioner on receiving a case of diabetes recognizes that he has two duties to perform, one to the patient, and the next to the family; he then searches out in the family all those who have not yet had or got diabetes, but who are going to have it, and puts them under prophylactic care, thus preventing its occurrence in a definite number of individuals.

How can we recognize the incipient case? In the first place, sisters or brothers of the diabetic individual who are obese are likely candidates in whom to look for the occurrence of diabetes. In the second place, relatives who have goiter, or a tendency to thyroidism, should always be considered suspicious. If there is any doubt about the question as to whether there is a tendency to the disease, it

can be definitely settled by a simple test. The test is simply to administer to the suspect 75 grams of glucose, collect the urine for five hours afterward, and test it for sugar. In case a positive reaction is obtained, the carbohydrate tolerance is lower than normal. Having discovered such a case, make the patient live a life in which he will avoid raw sugar, sweets and such things, have him live moderately with regard to those things which will cause unusual wear and tear on the nervous system, such as life on the stock exchange, abuse of alcohol, etc. Such a patient should not be subjected to unusual emotion or excitement. If this line of treatment were generally and consistently followed, the mortality from this disease would be materially reduced.

I heartily endorse what Dr. Robinson has said with regard to the fallacy of relying too much on drugs in diabetes. The thing is overdone to a large extent.

Dr. Fenton B. Turck, Chicago:—The treatment of diabetes may often rest largely on a protein diet. Restriction of carbohydrates being necessary, it is essential to know what form of protein to feed these patients. If we give them too much gluten bread, there is too much glutamic acid—as much as 39 per cent. Glutamic acid is a toxin and, therefore, in excessive amount glutamic acid will precipitate or produce other toxic symptoms. If we feed these patients too much meat, we have a high percentage of extractive, such as creatin, xanthin, hypo-xanthin and purin bodies, and as the result of these we furnish the intestinal micro-organisms with pabulum out of which toxins are formed, and consequently toxemia occurs from excessive meat diet. In meat there is a large amount of fat that is very indigestible, especially those fats of high melting point, as stearin, which undergoes decomposition in the intestines, forming butyric acid, resulting in acidosis. To avoid toxic effects it is essential to know the extent to which we can furnish gluten in the form of bread; also to supply the meat in such a form that it may be free from toxic substances, and, at the same time, render it very digestible in the alimentary tract, thus limiting infection in the lower intestinal tract. The meat must be so prepared as to remove the fat and the extractives at the same time, as well as transforming all connective tissue into gelatin. The food is thus digested in the upper intestinal tract without causing toxemia. Preparation of the meat is as follows: The meat is put in water, soaked and the juice pressed out. The meat is then put in a steam chest and in water and steamed for several hours. This removes the fat and the extractives and transforms the connective tissue into gelatin. This renders the meat free from toxic effects and it is readily digested in the upper alimentary tract. If we wish to increase the digestion of the meat we can add an acid to the meat before cooking, which increases the hydrolysis of the connective tissue, transforming it into gelatin. It is all absorbed in the stomach, duodenum and jejunum, and there is no residuum which can be found in the feces. It is essential in a meat diet to examine the feces to find whether there are any remnants left in the feces, for the reason that micro-organisms in the lower ileum will develop and generate toxins in these cases, and the secondary effects resulting from this toxemia are such that these patients cannot stand. By some such means, as the essayist has suggested, we can educate these patients to a high protein metabolism, so that they are able to sustain life and to obtain the necessary calories, and, at the same time, increase their strength and prevent intoxication. We may fail to increase protein utilization, but we need not fail to prevent intoxication. I wish also to say that drugs are sometimes very useful, and I merely want to call attention to the use of the mixed alkalies which can be given, even though we have no acidosis. It is essential in these cases to supply them with sufficient alkali to neutralize acid formation. By this means we will be able to give them a high protein content without the usual toxemia which will arise from the secondary infection and putrefactive products that come from the intestinal tract.

Dr. S. T. Robinson, Edwardsville (closing the discussion):—I simply wish to remark that it is impossible in a twenty-minute paper to cover the field of diabetes. Each case must be examined and largely treated upon its own merits.

The concluding remarks of Dr. Turck on the adaptation of proteid foods to the diabetic's condition seemed to me to be extremely wise and full of good reasoning. In these matters the practitioner must search out and by careful examination of each case adapt the food largely to the individual, the main principle, however, being that we must keep these people off of carbobydrates. We must do it as soon as possible. That is the first consideration, and the next consideration is to adapt the proteid to the individual.

SOME BORDERLINE PSYCHONEUROSES.*

ELMER L. CROUCH, M.D.
JACKSONVILLE, ILL.

A good deal has been said and written regarding the various marked psychoses and neuroses. It is the intention of this brief paper to consider a group of very perplexing cases that frequently come under observation which may range all the way from an apparently normal individual who might be said to be eccentric to one who at first glance simulates some of the true psychoses or neuroses.

This group includes various abnormal conditions characterized by the follies of indecision and doubt, obsessions, tics, agitations, phobias, states of anxiousness, neurasthenia, psychasthenia and certain traumatic neuroses and psychoses. In this group we find a reduced mental tension resulting in fears or fixed ideas which dominate the patient's mind, rendering him incapable of focusing his attention upon his usual normal occupation. He is self-centered and introspective. These ideas tend to harass the patient, continually rendering him unhappy within himself and frequently a nuisance to those with whom he comes in contact. As a rule, he is perfectly aware of the inconsistency of his ideas and can frequently be argued out of them for a time though they soon return. It is this ability to see and discuss these ideas in their proper light that differentiates them from the delusions of the true psychoses.

Most cases retain a fair degree of psychic balance over a long life although some may shade imperceptibly into the deeper psychoses. These changes might be called physiologic alterations of the feelings, the will and the perception which may either right themselves under proper treatment or go on to the more profound psychoses. Usually the patient talks freely of his condition and wants to tell his ideas. He is very anxious to get well and is willing to work hard to do so but in spite of his best endeavor to argue himself out of a senseless fear or refrain from committing a useless or silly act, the idea insists upon recurring and demands his obedience.

It is very important to obtain a full and complete personal history of the patient as well as a family history. By so doing, we will find a certain number, prenatal in origin, but as our knowledge of the personal history and conditions of the patient is increased, we will be able to trace the origin in a large number of cases to causes arising after birth. In a

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

large per cent. of cases, the patient comes into the world with congenitally lowered powers of resistance to emotional, intellectual, physical and chemical stress. This lowered resistance which constitutes the chief predisposing cause is a bad heredity; by this we mean that there is transmitted from the ancestors a biologic weakness, or in other words, an unstable organism. This, together with a bad environment and improper education and training, renders the individual especially susceptible to an external stress. By stress, we mean all of the forces which act upon the individual organism and its constituent cells; this may be either physical or psychic, and therefore includes various toxic and metabolic disturbances, the wear and tear of life, mechanical work and intellectual effort or a nutritional disturbance.

Every experience which produces the painful effects of fear, anxiety, shame or of psychic pain, may act as an exciting cause. Whether an experience becomes important naturally depends on the person affected; as in the traumatic neuroses, the active etiologic factor is really not the insignificant bodily injury but the effect of the fright; that is the psychic trauma. Notwithstanding the inherited predisposition, an exciting cause is necessary in the majority of cases. As our knowledge of the chemistry of disease grows and as we examine patients with greater and greater thoroughness, we find a large number of cases manifesting either a toxic or a nutritional disturbance.

If we do our duty by these cases, they must receive a thorough examination, then some carefully considered diagnosis must be made and some definite treatment instituted. By no means should we say that there is nothing the matter. We must not lose sight of the marvelous psychophysical organism which constitutes the self and of the need of balance and a good proportion which is necessary for the health of such a complex structure. Usually, in this group, there is a lack of proportion and balance in mental life. The emotional disturbances, anxieties, disappointments and thoughts which have a contradictory effect on the personality, tend to keep the thoughts in one groove on one set of ideas or objects. When to this is added some derangement of the physical system, the patient becomes self-centered and miserable. We know that when one feeling or idea is allowed to monopolize consciousness the will gets weaker and weaker.

If we analyze more closely some of the leading symptoms, it will help us to a better understanding. Judgment being the highest quality of the mind, it is quite natural that with the advent of diminished nervous tension, it should be the first mental attribute to decline with the inevitable result of vacillation and indecision and with this comes doubt. With this decline of judgment comes also a lack of power to inhibit. The patient complains that he cannot stop thinking; this automatic thinking goes on into the night, causing insomnia or dreaming.

In conjunction with diminished inhibition and automatic thinking comes another symptom which is a tendency of a single idea to repeat itself over and over. The thought or obsession being constantly repeated naturally impels the patient to action or impulsions. There may be a

decreased capacity for mental work. Mental effort may become difficult or impossible or there may be an inability to fix and maintain attention; memory becomes defective. Ideation does not occur with the usual vigor and rapidity. The patient becomes introspective, self-watchful, associating external conditions and suggestions with an unpleasant feeling tone; the ideas, either conscious or sub-conscious, may be of a vague sense of dread, as of impending danger or harm. Fears or phobias may be of every conceivable kind and many names have been coined to describe them.

In considering the treatment of this group of cases, a very important factor is that of prophylaxis and in order to be most efficient should be begun even in the third and fourth generation of the ancestors. Much, however, may be done for the predisposed neurotic child by encouraging a wholesome, social environment and teaching him to observe all the rules of hygienic living; especially should he get the proper amount of sleep in the open air or in a well-ventilated room. The nutrition should be looked after by giving a liberal wholesome diet. The education and training are important; he should be taught what responsibilities to assume and what to decline; what he can do and what to avoid. Nothing should be permitted to interfere with proper development.

In the treatment, each case should be treated individually by the application of proper therapeutic measures, as indicated after a clinical and laboratory diagnosis has been made. Some may be so slightly affected as to require nothing more than a change of scene or removal of the exciting cause. For those more seriously ill, the *Rest Treatment*, as devised by Dr. S. Weir Mitchell, is the best. Its important elements are: Rest in bed; proper nursing, feeding, massage, isolation, baths and electricity. Rest in bed should be as near as possible absolute, the time in bed depending upon the severity of the case. The nutrition should be looked after by giving a large quantity of easily digested food, consisting of milk, eggs, cereals, fruit juices, vegetables, lamb, chicken, etc., given at proper intervals. Coffee, tea and alcoholics should be avoided. Massage takes the place of exercise of the bed patient. It increases the peripheral capillary circulation and gives the muscles work without causing fatigue. Isolation is very important; in severe cases mental rest is as important as physical rest. The patient should be isolated, especially from members of his family and immediate circle of friends. Much harm is done by the immediate association of the patient with his relatives. Their mere presence is a constant reminder of his changed condition and their sympathy and solicitude accentuate his suffering and as a rule emphasize his delusions. Hydrotherapy and electricity should be used as indicated. The rest treatment may be carried out in detail or modified according to the indications in each individual case. All possible causes of external irritations should be removed. Ocular disturbances should be remedied, etc. Proper attention should be paid to elimination.

Drugs play a very small part in this group of cases. When there is much gastric atony, increasing doses of nux vomica before meals is useful. The glycerophosphates of lime and soda are very beneficial as nerve

tonics in selected cases. In some cases, quinin, iron or arsenic are of service in aiding nutrition. When indigestion is present, bitter non-alcoholic tonics, mineral acids and intestinal antiseptics are often of use. The chief use of drugs is to combat certain symptoms. Great nervous irritability may be benefited by moderate doses of sodium bromid. Vasomotor disturbances may be treated by nitroglycerin or nitrite of sodium. The bowels should be kept open and the kidneys active by the free use of water, or if necessary, cascara at bed-time or salines before breakfast may be given advantageously. If a warm bath at night or massage at night followed by a glass of hot milk does not secure sleep, trional, sulphonal or veronal may be administered in some hot milk or chocolate.

The psychic side should not be neglected but each case should be analyzed, warped views and obsessions straightened out and explained by logic, persuasion and encouragement. Those who have much to do with organic functional neuroses and psychoses are familiar with the wonderful influence they are able to exert over the mental attitude of those afflicted by kindness, patience, firmness, interest and sympathy. Everything said and done, if rightly said and done, conveys a suggestion, inspires hopefulness and increases the efficiency of other methods of treatment; points out the way to health and a new lease on life.

THE PREVENTION AND TREATMENT OF INSANITY.*

EUGEN COHN, M.D.
Assistant Superintendent, Anna State Hospital.
ANNA, ILL.

In reviewing the various etiologic factors that have either direct or indirect bearing upon the production of insanity it is apparent that when we wish to consider the prophylaxis of disorders attacking the mind, we must look, not only upon the important medical aspect of the subject, but upon its many educational and sociologic phases as well. In no disease, with the possible exception of tuberculosis, and venereal afflictions, is prevention of greater importance to the welfare of society.

While I have little that is particularly new to offer upon this subject, I feel that it is of such vital interest to us all, that it cannot be too frequently or forcibly brought to our attention. We keenly realize the close relation which exists between insanity and various other forms of weakness affecting the physical, nervous, and moral state. We know that often various types of the defective and delinquent are bred of the same strain of blood which produces insanity. Knowing this, we must be prepared to do battle against all of these forms of degeneracy, if the number of those predisposed to mental disorder is to be decreased to any perceptible degree.

---

* Read at the Sixtieth Annual Meeting of the Illinois State Medical Society, held at Danville, May 17-19, 1910.

We find there is a great divergence of opinion among those who have made a study of heredity influences. The per cent. of cases in which hereditary predisposition is considered a vital factor in the production of insanity varies from a small to a very large ratio, from twenty (20) to ninety (90) per cent. My own experience inclines me toward a belief in the higher ratio, for a careful investigation of the family tree of the person afflicted, when a clear history is available, usually reveals evidence of degeneracy somewhere along the line. I fear, however, that the recognition of those who are predisposed to mental diseases leaves much to be desired. We are fully cognizant that certain forms of psychoses and neuroses, strictly speaking, belong to groups that are degenerative in character, and that those coming from such a stock are in danger. It is possible that careful research and study of individual constitution and character may some day result in a more timely recognition of those who are predisposed, and may bring about a more exact basis for the determination of this question. For the present, it seems that the existence of marked degenerative traits in the family history, and the various nervous or neurotic states evident in childhood and early adult life, should act as ample warning. It suffices to say that there are certainly many individuals who, by inheritance, come into possession of a feeble constitution and a predisposition towards nervous instability. Our prophylactic efforts should consequently be first directed to the removal of this important fundamental cause.

Let us look upon the prophylaxis of insanity in its broadest sense. There are indeed, as I have said, many underlying problems of a sociologic nature which have an important bearing upon the subject at hand. I should like to dwell at some length upon a few of these points. It is surely necessary in the interest of the prevention of insanity, that a vigorous campaign of general education be instituted. This cannot be done by the medical profession alone; teachers, clergymen, and law makers must be enlisted in the cause. All good and intelligent men and women, in fact, especially fathers and mothers, should do their part; for a timely knowledge of the principles of good health and character, such as will protect the young and safeguard their future, should be gained, to a great extent, within the home. It surely well behooves parents to inform themselves thoroughly upon such subjects as are of importance to the physical, mental, and moral development of their offspring.

Parents should warn their children of the serious consequences which befall those who indulge in the various vices; they should not hesitate to give their boys timely information of the dangers of venereal diseases and of the disastrous consequences following them, in many cases affecting posterity and the innocent. How often, on account of prudishness on the part of parents, a child is allowed to grow into manhood or womanhood without any correct conception of the truth relating to bodily health and functions. How often, as the result of ignorance or thoughtlessness on the part of their elders, our boys and girls are left to grope their way in the dark, not infrequently, with serious consequences to themselves.

Fathers and mothers, it seems, ought to be well aware of their own deficiencies and, as far as possible, those of their ancestors. They should be warned of the danger of transmitting similar conditions to their progeny. They should know that influences affecting the development and destiny of their children must be reckoned with long before the birth of the children themselves, and that the possession of a healthy mind and body on their part, especially at the time of conception, is an urgent necessity.

It would be well if all our schools would adopt the plan of having a systematic lecture course, to be given by physicians, upon various topics pertaining to health and hygiene. Pupils of proper age, boys and girls in separate classes, should be instructed in sexual physiology and morality. They should be taught of the perils of venereal diseases; should know that syphilis, for instance, is often responsible for progressive organic brain disease, and frequently produces physical and mental degeneracy in succeeding generations, as is demonstrated by numerous examples within the institution for the epileptic and feeble-minded. The public in general should be well informed regarding syphilis and its relation to paresis and various other forms of degeneracy. Those who see the large number of deaths which occur in the hospitals for the insane, from paresis alone, will heartily endorse this statement.

The public should also be made fully aware of the great number of insane and other defectives whose degeneracy is distinctly traceable to alcohol. The public school pupil should receive adequate instruction regarding this drug; he should be taught in detail of its dangers, and its effect should be clearly and logically explained. Youth is usually amenable to reason, and this is the time when facts and explanations, such as these, should be made available. An enduring impression is possible, at this period, upon the mind and character of the young, that is of far greater influence for good than any appeal that could be made in later life, to their emotional nature. Instructions should also be given with regard to the formation and effect of the drug habits.

Not alone should appropriate lectures upon these subjects be given in the schools, but I cannot see any objection why every boy upon reaching the proper age, should not receive from his teachers some form of literature, setting forth concisely and plainly, such facts as are necessary for the guidance and maintenance of his health and morality. "Forewarned is forearmed," and he is that much better prepared to resist the temptations which may beset his path. What applies to the education of boys, moreover, would seem, in every way, to be equally desirable for girls.

Special safeguards should be thrown about the young at puberty. Those predisposed should then be carefully guarded against undue strain of mind and body; they should be protected from disorders, infectious and exhaustive in character. They should be free from worry, over-study, and all which might in any way undermine the nervous system. "A healthy mind in a healthy body," may not be correct in all cases, but we know that it bears great weight, when we consider the important part

that physical defects play in the production of insanity. Of this phase of prophylactic treatment I will speak again later on.

Schooling of children should be carefully considered and regulated. Education which is easily attained by one child may be much too difficult for another. Our universities and institutions for higher learning, with their rigid entrance requirements, would do well to demand, also, a clean bill of health from their matriculates. It is certain that parents very frequently force upon their children education which is far beyond their reach. An official board of medical examiners in connection with our colleges and universities might be an excellent safeguard against such mistakes.

The selection of a vocation or livelihood should be made, as far as possible, with full regard to the same consideration as applies to the gaining of an education. The duties, hardships, and mental strain, incident to the vocation or livelihood, should be weighed against the mental and physical capabilities of the person in question. If competent medical aid were sought at this time in advice and consultation, before making an ultimate decision, much might be done to prevent the fatal crises which occur in the lives of so many susceptible young people.

In our own profession, for example, we know that many a one might have escaped shipwreck had he chosen a less arduous vocation, with more freedom from physical and mental strain, and harder, perhaps, of access to drugs and stimulants. Victims of the drug habit are many, and are found in all stations of life; in the homes of wealth and poverty alike. The rich should be well informed of the danger of these and other excesses, which their financial ability so readily permits; and the poor should not seek forgetfulness of their suffering through such avenues as these. We cannot wonder that the children of the poor, begotten in surroundings such as are found in all of our large cities, so often bear the heavy burdens superimposed by such environment. In many instances a child's home influences are most contaminating, and often it would be infinitely better if the parents were deprived of any share whatever in its upbringing.

As civilization moves onward insanity not only seems to increase, but actually does increase. Perhaps we are justified in saying, in explanation, that, with the progress of the years, the struggle for existence becomes increasingly a mental one. The tremendous advance in all pursuits of life are responsible for an increased strain upon the average mentality. Life in many thickly populated areas is one of continuous speculation and worry. Competition of the keenest and most compelling sort is encountered on every side. In many cases the environment of the great city proves fatal to those of insufficient capability.

This matter of environment is one of deepest interest to us all. In the battle against insanity and allied diseases, nothing is of greater assistance than proper surroundings. Environment may be, in truth, a potent influence for either good or evil, as the case may be, and will often overcome many shortcomings that are inherited. When I speak of envir-

onment I use the word in its broadest sense, meaning everything by which man is affected and modified in his physical, mental, and moral growth.

Social settlement work in the congested districts and slums of our cities should be encouraged in every possible way. It is without doubt a wonderful help to the people and its value as an aid in solving many social problems should not be underestimated. The investigation and careful study by the courts of crime and criminals and their antecedents; the work of the juvenile courts and their probation officers; the many homes for the unfortunate, also accomplish a vast amount of good, and could be made to furnish, indirectly, much valuable aid in the solution of many questions connected with the prevention of insanity.

Some of our states are beginning to realize that the prevention of the defective and delinquent is not alone a very important humane question, but that, from the standpoint of public economy, much may also be said in its favor. Creditable efforts in behalf of this and other phases pertaining to public health are being made by these states; yet, taking into consideration the half-hearted and wholly inadequate efforts of other states, they are entirely insufficient to get the upper hand of these, and many other evils which besiege and burden us. So long as one state permits what another state holds unlawful, just so long will the ultimate results continue to be unsatisfactory.

Questions such as these, and many others concerning diseases of menace to the public health, are surely of sufficient importance to deserve the supervision of our National Government. Difficulties in the way of the assumption of such responsibilities by the government are evident, when the infringement of individual state rights is considered. If this matter, however, were controlled, as it properly should be, by some form of interstate legislation, even though this might possibly require the creation of a constitutional amendment, these difficulties could and would be overcome.

Does not the government spend millions of dollars in the development of domestic animals and agricultural products? Upon the appearance of an epidemic among beast, or blight among fruit or vegetables, are not liberal sums of money forthcoming to help fight and subdue the disease? While all these things are of immense value to the prosperity, and indirectly, to the general health of the country, yet is not the most essential and vital undertaking, after all, the direct promotion of the health of our people?

Surely the development of public health might worthily become a matter of national interest and supervision, and, through the cooperation and control of local and state boards of health, for "in union there is strength," we might be able to secure results more farreaching than could well be estimated.

The insane hospitals, all over the world, daily send home patients apparently recovered from their attacks of insanity. Many of these cases are types in which inherited predisposition and degeneracy play an important part, as, for example, the manic depressive group. They are, as I said, apparently recovered from this particular attack. Their special

constitutional weaknesses, however, are not greatly considered when their release is granted. They are permitted to go out into the world; to marry, or to resume their former marriage ties, as it may happen. Reproduction takes place, and perhaps, even before the birth of the child, they are again brought back to the hospital because of the recurrence of a similar attack. Such cases are frequently seen, and the question arises, "what are the chances for the future of a child born under such circumstances as these"? My own conviction is that there is probably grave danger that just one more defective has been added to the great army of unfortunates who burden society, and for whom existence may prove to be only a curse. The same state of affairs often occurs, also, in many cases not recovered, but considered sufficiently improved to be entitled to a trial outside the hospital.

The law should provide that patients of the types mentioned should be given their choice, either to remain within the institution, or to allow themselves, before their release, to be incapacitated for reproduction. Such a law, properly carried out, would lessen a vast amount of misery. It should also be enforced within institutions for the feeble-minded and epileptic. The hopeless delinquent in our penal and reform institutions, as well, should be subjected to the same procedure, before he is allowed his liberty.

Like very often begets like, and we cannot hope to diminish the number of the insane until we adopt measures which will interfere with their production. Those unfit to become parents, to whom the production of sane and healthy offspring is an impossibility, should be educated upon these subjects, if they are susceptible to education, and their marriage should be forbidden. Those beyond the reach of education, should be rendered incapable of propagation; for whoever comes into close contact with the mentally defective and delinquent, through study and association, cannot but become aware of the existence of many hopeless creatures upon whom education and advice are worse than wasted. Capable only of responding to the animal instincts, they live but to gratify their desires. For them, marriage restrictions of any kind would be of no avail, and the only remedy capable of affecting a dimunition of their kind is to be found in the proper use of the surgeons' knife. If this remedy is not fearlessly applied, the defective and delinquent of illegitimate birth also will soon outnumber the defective and delinquent born in wedlock. Operations for partial resection of the vas deferens and the fallopian tubes should lawfully occupy a most important place in our institutions for defectives and delinquents, and should be rightly recognized as the only sure prophylactic method possible under these conditions.

The preservation of the physical health and the removal of all foci of irritation in those who are predisposed are points of utmost importance in the prevention of insanity. There is probably no branch of our profession in which a wide knowledge of general medicine is more essential, than in that which treats of the disorders attacking the mind. It is still

to be determined just how defects of a physical character may, at times, influence the brain and its function.

The metabolism of the nervous tissues is as yet but little understood and therefore the possibility of faulty metabolism being an important factor in the production of various insanities is a point which should not be overlooked. Perhaps some day the causes of the many so-called auto-intoxications, or autogenic poisons and their effect on the nervous system will have a more definite explanation and this may help considerably in the prevention and treatment of insanity. How much the products of retrograde metabolism and their retention in the system are the cause and how much the effect of neuropathic and psychopathic states is still an open question. There is surely room for a vast amount of research in this particular field.

We must not forget that there are certain critical periods in the lives of the susceptible when the dangers of mental breakdown are particularly prone to arise and when the physical health should be especially guarded. I refer to the physiologic epochs, such as adolescence and puberty, the puerperium, the menopause and the senium. At these times special precautions should be taken to protect the health, and every possible factor productive of worry or mental strain should be eliminated.

Experience has taught me that in the state hospitals for the insane there can be given, with much benefit to the patients, a certain amount of instruction as to the means of preventing the recurrence of attacks. This instruction is naturally for those of sufficient mentality to comprehend its import and is practically intended for the convalescent; those expecting, sooner or later, to leave the institution. For some time past I have given a short lecture course to the patients for the purpose of explaining a few of the ordinary laws of health. They are advised how to care for their bodies and are made to understand in what way neglect of health and excesses of various kinds may become responsible for a return of insanity. At the same time proper advice is also given regarding their relations to society and their conduct as citizens. The danger of bad behavior, such as loss of temper, threatened violence, etc., is pointed out. Lectures of this kind not alone teach them simple means for the preservation of health and what their behavior and deportment toward society should be upon their release, but have also a wholesome effect upon order and health within the institution. Some two years of this kind of prophylactic work has convinced me that there is value in it.

In taking up the topic of treatment I will restrict myself to a brief description of methods which I have found of value during my service within the institutions of this state.

The care of the insane in the hospitals of Illinois has undergone a decided revolution within recent times. Not many years ago Illinois, like many of the states to-day, had practically nothing to offer these unfortunate wards but custodial care. In later years, however, under a progressive state government, administrative and advisory boards and commissions have been created, composed of men of the broadest intelligence and actuated by the spirit of advancement. Under their guidance the

charitable institutions of our state have gradually attained a higher standard of efficiency. Instead of places of detention where the mentally afflicted were confined for the protection of themselves and of society and to be fed and clothed, the state now conducts hospitals in the fullest sense of the word whereby both society and the patient receive adequate protection, and where the best hospital methods and all available means are employed to assist Nature in restoring these unfortunates to health.

None but men of special fitness and merit are selected as the heads of our institutions.

The medical departments are being carefully organized and are scientifically conducted. The civil service is doing its best to select none but the most competent for its eligible list. This does not apply alone to the medical officers but to the employees of all other departments as well.

In a psychopathic institute supported by the state, the state hospital physicians receive such education as will make them proficient in the care and treatment of the insane. This department is under the direction of a man who is an expert in this special branch of medicine. Modern laboratories have been placed in the institutions and a complete and uniform system of physical and mental examination and classification is enforced. The introduction of the trained nurse and of the training school, have contributed largely to the care and comfort of the patients. Special hospital buildings have been constructed for the treatment of the physically sick. They are furnished with all necessary modern appliances. Departments for the use of hydrotherapy and massage are now found in the various institutions, and on the whole much has been done to convert the Illinois state institutions from lunatic asylums, so-called, into hospitals for the treatment of the mentally sick.

In the modern treatment of the insane the broadest possible principles should be applied. It is well to look on every new admission to the insane hospital as a person whose health is generally impaired. A thorough examination of every patient is, of course, imperative before any logical treatment in the individual case can be instituted, for a complete understanding of the individual's physical as well as mental makeup, both of the past and present, is most important. The laboratory can be made a most invaluable adjunct to the clinical work within the institutions.

We know that the cardiovascular system and the state of the blood, the organs of digestion, the general nutrition, the functions of elimination and metabolism, all have important bearing upon the well being of the nervous system. It is therefore very evident that all disorders of this nature should speedily be detected and removed in so far as the case permits.

In arranging the receiving service, which should be free and independent of the chronic departments of the insane hospital, it is essential that new patients should be carefully grouped, so that those who are quiet, clean and well behaved, will not be disturbed or imposed upon by the noisy and untidy classes. For this reason special apartments are necessary. It is often apparent that certain patients have an excellent influence over other patients, and through their companionship contribute

much towards the general well-being. Special rooms for use, when complete isolation is deemed advisable, should be found in every receiving service.

I have long since made it a rule to put every new patient to bed as soon as admitted. Rest in bed, reasonably enforced, does no harm in any case. It is of great value in many cases, especially in those of acute excitement and depression, as well as in the toxic and infection exhaustion group of psychoses. Bed treatment, when rationally used, is the one and only remedy which I find universally useful in the treatment of the insane. The psychic effect on the new comer of being placed in bed, waited upon by nurses, and of receiving medicinal or other treatment at stated times, is most beneficial. To those of sufficient mentality, the thought of being considered a sick person, and of receiving treatment such as the sick are accustomed to receive is in itself a re-assurance, because it helps to rob the patient of the cruel belief, so often entertained, that he is simply an outcast of society, an unsafe person; nothing more perhaps than a prisoner.

A commendable supplement to the bed treatment is the use of massage. Good results are obtained, and tissue metabolism is encouraged. Massage offers a substitute for the usual motions and activities of the body. This passive artificial exercise is particularly indicated when rest and bed treatment must be prolonged and nearly absolute. I have found it of the most value in the depressions, stupors, and neurasthenic states. Every institution should employ competent persons for the giving of massage, who, in turn, should teach the pupils of the training school, so that it should come into prominent and practical use.

Absolute bed treatment can be dispensed with for a part of the day, as the case progresses, and the patient may be permitted to remain out in the open, where there is an abundance of fresh air and sunlight. The greatest possible amount of out-door air and sunshine is as important in the treatment of insanity as in the treatment of most other diseases. This is certainly true of those cases who are convalescing from an acute attack. Sun rooms and large porches are most useful to the wards intended for the care of the acute cases. When the patient is able to leave his bed the greater part of the day should be spent out of doors. It frequently happens that the number of employees in state institutions is not sufficiently large to permit them to give the open-air treatment to the convalescing patients to the extent that may be desired. I have, for nearly two years, employed the following simple but effective method to overcome this difficulty, with almost uniform success. I divide the convalescent patients of the receiving wards into groups of five and six, designating such patients as companions as seem helpful to each other. As soon as a patient is sufficiently convalescent, which, in acute cases in my service, means the time when the bed treatment is dispensed with, he is placed in one of these groups. He promises, in the presence of the other patients, and on his honor as a man, not to make any attempt to leave the institution without the knowledge and consent of the officials. He also promises faithfully to do his best to prevent the others in his

party from breaking any part of their obligation. These parties are then permitted to go about the hospital grounds without the care of nurses or attendants. The patient is thus afforded an opportunity to spend the greater part of the day in the fresh air. He is expected, however, to be on the ward for a short time when the rounds of the physicians are due, and in time for meals and retiring. I have found that practically all of these convalescents appreciate that they are trusted. They seem to realize that they are put upon their honor and that each one is, in a measure, responsible for the deportment of the others in the party. They are encouraged and cheered by this sign of trust, and I have found this system a better protection, in many ways, than with the usual accompaniment of attendants and nurses. The psychic effect is also wholesome and healthful. The question is often asked, "How many escapes occur with this method in vogue"? and I am justified in saying that there are practically none. In some four hundred convalescent receiving ward cases treated in this manner, I had some two or three attempted escapes, while the open air treatment, which is thus given to a maximum extent, exerts an immense influence for good.

Phototherapy or treatment by light transmitted in various colors, and the use of special color effects in the surroundings of the patients, have been recommended in this, as well as in European countries, as a means of help in the treatment of the insane. Some of the advocates of this form of therapy have been remarkably enthusiastic. The claim is advanced that certain colors have a soothing and calming effect upon the nervous system. The different shades of blue and violet are the most prominent colors employed for this purpose. Others are apt to increase psycho motor activity and restlessness, red being a prominent example. I fitted up one of the receiving wards with a color scheme, as an experiment, dividing the ward into departments, and using the colors most recommended, namely: red, blue and green. After eighteen months of careful observation, I have come to the conclusion that the color treatment does no harm if the depressed are restricted to the red surroundings, the mildly excited to the blue or green, and the badly excited to the blue or violet, but that there is but very little real value in it. The only value which I have noticed was in the use of the blue or violet shades for the maniacal types. Most of these seem to get along better, and are more comfortable in blue surroundings. In summing up my experiences in some three hundred cases I feel that in my hands color schemes and color lights have proven fairly negative of result, excepting in the use of blue or violet. Departments intended for the acutely maniacal could be made more useful, perhaps, by fitting them out in blue, with window lights, electric globes, walls, ceilings, etc., to correspond.

Psychotherapy, or so-called mental treatment, doubtlessly has application in the care of the mentally afflicted, and its benefits are many when supplied in the form of wholesome environment. The psychic effect of the surroundings upon newly admitted patients is of great importance. The receiving ward should be made as pleasant and homelike as possible. Everything that will reassure and encourage a patient and take away the

appearance of custody, is beneficial, but care should be taken to keep within the bounds of safety. The selection of pleasing furnishings, such as rugs, draperies, flowers, etc., are points worthy of consideration as a means of psychic influence.

Ways and means should be liberally supplied to furnish amusement and diversion for the convalescent of the acute type. Books, games, billiard rooms, etc., are of service in the wards occupied by the acute cases.

The personnel of those in charge of the receiving wards, including physicians, nurses, and attendants, should be selected with great care, for much depends upon the personality of those who administer the treatment. It is surprising how one person with tact and personal magnetism will control a given patient where others have utterly failed. When the confidence of the patient is gained the way is often plain. If a newly admitted patient is open to suggestion, he should be told why he came, and the real purpose of his confinement. He should be impressed and encouraged by the belief that he is there for conscientious care and treatment, and should be made to feel that the chief object of all is to help him back to the ways of health. He should be kindly but firmly told what is expected of him, what his conduct should be, and in what manner he may assist in his recovery. Kind, but firm, discipline should be used in the control of all patients.

I firmly believe that the use of drugs should be limited to conditions which offer real indications. I have been in the habit, however, as a matter of psychic treatment of giving every new comer, for a number of weeks, some kind of medicine, frequently only a placebo in the form of a simple tonic. People in general still believe that medicine is a necessary part of the treatment of disease, and I see no reason why they should be disappointed in this desire. Medication for the insane requires that the amount used should be reduced to a minimum, just as in the treatment of general diseases. Medicinal agents, however, are required at times, and of these the hypnotic class are perhaps worthy of first consideration. It is well to remember though that to-day the need of hypnotics is not nearly so urgent as in former years, for hydrotherapy has done much to lessen its employment. Hypnotic drugs should be avoided whenever possible, for we know that practically all of them are apt to produce detrimental effects when their use is prolonged. Many of them interfere with the secretions of the body, and we know how necessary proper elimination is in the acute cases. The unpleasant cumulative effects of these drugs, their injurious influence upon the circulation, as well as the danger of addition, should be continually kept in mind. I believe, however, that hypnotics have a proper place in the treatment of insanity, and are valuable if used with care and judicious supervision.

Increase of psychomotor activity of a most distressing and exhausting character is often observed and at times does not seem to respond to hydrotherapy. In such cases the careful use of hyoscin is of value and much exhaustion may be spared the patient by its proper use, though the

depressing effect which this drug exercises upon the heart must not be forgotten.

Opium and its preparations are of aid in psychopathic states accompanied by much anxiety and agitation. I consider the opium preparations otherwise injurious in the treatment of insanity, because of their interference with the functions of elimination.

The bromids are especially useful in the epileptic psychoses, and in mental disorders in which it is desirable to allay cerebral activity and irritability of a reflex character. The need of an anti-aphrodisiac is not infrequent, and as such the bromids serve a useful purpose. The cumulative effect of bromids and the danger of bromid toxemia are, of course, to be avoided. Chloral often induces restful sleep when other methods have failed, especially where there are hallucinations of a troublesome character. The rectal use of chloral is at times a most convenient method. The danger of chloral as a heart poison should be noted. Paraldehyd is a very useful hypnotic, and fairly safe. Its disagreeable taste probably interferes with its more liberal employment. Paraldehyd will often produce a happy effect in many stubborn cases of insomnia, where other measures have proved of no avail. I have used trional and sulphonal to a moderate degree. The sleep produced by these agents is usually refreshing, but their prolonged use may produce states of toxemia.

Drugs of the hypnotic and narcotic group have a place in the treatment of the insane only in cases in which, after faithful trial, other methods have failed, and where the necessity of rest is imperative, because of the danger of exhaustion.

The question of elimination is always an important consideration in the treatment of acute cases of insanity, and drugs which stimulate elimination, through the various avenues provided by nature are often of great value. The building up of the general strength and of the condition of the blood, the proper attention to the digestive system and the guarding of the cardio vascular system, are all points of importance and should receive such treatment, including medication as is ordinarily considered proper.

There has been much discussion, pro and con, as to the advisability of surgical operations upon the insane. Personally, I can see no reason why capable and honest surgery should not bear the same relation to the insane as to the sane. It appears that whenever there is in the insane a well-established indication for surgical interference, the same should be promptly carried out. The removal of all foci of irritation is certainly to be desired, and surgery is often the only resource.

It is an undeniable fact that in the supposedly sane an outbreak of insanity occasionally follows the performance of major surgical operations with their prolonged anesthesia. Such cases are not frequent, however, and are usually transient in character. I cannot see why their occurrence should indicate that the beneficent results attendant upon the judicious use of surgery should be altogether dispensed with. My own experience in surgical work among the insane has, on the whole, been satisfactory.

I have operated whenever I have been convinced that the indications were actually present, and have seen considerable resulting good.

Hydrotherapy, one of the most valuable of all measures in the treatment of insanity, is now liberally used within the institutions of the state. Modern hydrotherapeutic departments have been installed, and the results obtained are gratifying. The use of water in the form of baths, packs, sprays, etc., in the treatment of mental disease, is not a new idea. For years it has been recognized as a useful therapeutic agent in the insane hospitals of the old countries. In this country it is within limited years that it has come into use to any extent; in Illinois, quite recently.

Physicians engaged in the care of the insane should realize that the equipment of an institution is incomplete without a modern hydrotherapeutic department. Hydrotherapy is not a cureall, by any means. There is no remedy used in the treatment of mental disease that will reach every case, but it is without doubt of decided value when rationally employed. Hydrotherapy has brought about a decided decrease in the use of all kinds of restraint. It has made the use of hypnotic and narcotic drugs unnecessary in a great many cases. It is of much value in assisting the functions of elimination. In some of its special forms it is also valuable as a stimulant to the nervous system. Warm continuous baths and hot, neutral, or cold packs are very useful on account of their sedative effect. Stubborn and distressing insomnia often can be overcome by these measures. Mechanical, manual, and medicinal restraint are frequently made unnecessary. Many times the periods of maniacal excitement are much lessened in duration by the use of these agencies. The pack is a very convenient measure, as it is readily used without the necessity of removing the patient from bed, and, if skillfully applied, serves as a convenient restraint to the excited and restless patient, until its sedative effect is experienced. The hot pack, the Russian, Turkish, and electric-light baths are all excellent to stimulate elimination, and are beneficial in the toxic states. In the use of heat, however, one must never forget the possible danger of cardiac depression. For this reason all forms of hot baths and packs should be given under the careful supervision of a competent person, and the physician should have an intelligent understanding of the cardiovascular system of the patient, before the hot bath, in any form, is ordered. The different forms of cold sprays and douches have stimulating effect, and are usually of value following the hot bath. They are also beneficial in the stupid and depressed states, if used with care and for brief periods. The most and the real value of hydrotherapeutic measures are found, however, in the use of the packs and baths intended for sedative and eliminative effect.

The diet of the acute insane is an important part of the treatment, and it should be adapted to the physical needs and ailments of the patients. Light and nutritious diet is generally in order in the average acute cases. The digestion, in the greater part of the acute psychoses, is more or less weakened, and therefore light foods are indicated. We hear much discussion of the so-called "over feeding" in the treatment of the acute insane, just as in the care of the tubercular. This overfeeding

is at times a very harmful procedure. The patient's digestive powers must be first ascertained as we are apt to increase an already existing toxemia due to fermentation and putrefactive changes within the gastro-intestinal tract. The maximum amount of easily digested, nutritious food, consistent with the patient's power of assimilation, ought to be the proper conception of a full diet. Milk, eggs, light cereals, puddings, fruits, light vegetables and occasionally some well cooked meats, are the foods best adapted to the needs of the acutely insane. A liberal quantity of water is most essential, and the nurses in charge should have specific instructions to give the acute cases sufficient amounts of water at regular intervals. The diet can be gradually increased as convalescence begins.

A diet nutritious but not too heavy is preferable for the chronically insane and the quantity and kind of food should be gaged, more or less, by the daily amount of physical exertion and exercise of the patient. Those assisting in the labor of the institution should receive a larger allowance of meats than the ones doing but little manual work. The diet of the epileptic insane should be especially watched with the view of preventing gastro-intestinal putrefaction. It should be a routine task of all wards to make careful note, at stated intervals, of each patient's weight, as this gives valuable insight regarding the state of nutrition.

One of the most troublesome conditions occasionally arising in the care of patients of the acute type is the refusal of food. At times it becomes necessary to resort to artificial means to prevent serious exhaustion or even starvation. For this purpose the feeding tube should be judiciously employed. Often, with tact and perseverance, patients can be induced to take food who have stubbornly refused, but there are times when no amount of persuasion is successful. It is well to give the patient a reasonable amount of time to decide upon taking nourishment, but it is not safe to wait too long. In newly admitted cases one must always take into consideration how long before admission the patient has been without any, or insufficient, food, and it may be necessary to use the tube immediately. The usual foods employed in tube feeding, milk and eggs, should be given not less than twice a day. A moderate amount of sugar, salt, beef juice, and such medicines, artificial digestants, etc., as are necessary, may be added to each feeding. In artificial feeding there is the danger of an occasional fatal collapse, for example, should a patient be permitted to struggle violently when afflicted with a weak heart. It is always well to have plenty of assistance at such a time, in order to prevent unnecessary struggling. The administration of a mild hypnotic prior to tube feeding may be needful to prevent unusual exertion on the part of the patient. The occurrence of asphyxiation due to the entrance of food into the air passages must of course be guarded against.

We realize that mechanical restraint has been greatly abused in years gone by and while its use in the institutions for the insane in this state has been much reduced, as I have already mentioned, the ideal condition, naturally, would be one in which mechanical restraint could be entirely dispensed with. For my own part, however, I have not yet reached the conclusion that this is altogether attainable. The state is apparently

not able to supply enough help to meet the requirements of ideal conditions, and even though a sufficient number of attendants and nurses could be assured, there would still remain cases, in my opinion, in which mechanical restraint of some kind would be a necessary evil. There are times when hydrotherapy will not have the desired effect in subduing excitement; when the constant activity of the patient may produce serious exhaustion; and when the use of narcotic drugs, on account of special contra-conditions, are dangerous. At such times the hands of the employee only invite additional struggle and I have found the bed strap of great assistance in these cases in keeping the patient in bed and under better control and supervision. It facilitates the carrying out of the general treatment, and prevents exhaustion. The patient does not suffer any discomfort; on the contrary, I believe that restraint in bed, properly applied, and under the supervision of the physician in charge, adds to the patient's comfort. The only time at which I find it necessary to use mechanical restraint is to keep those patients in bed who are in absolute need of bed treatment, and who cannot be safely kept there by any other means. Above all, it should be remembered that this form of restraint should be strictly under medical supervision, and should be used only when there are distinct indications of its necessity.

Just a few words regarding the care of the chronic types among the insane. Every institution has many of these cases, and, on the surface, it may appear that but little can be done for them excepting as regards their general comfort, such as protection, housing, feeding, etc. This is far from the truth, however, for there is much that can be done to make their lives more endurable and useful; much that will improve their mental state and lessen the speed with which the deterioration of the mind progresses. Suitable occupation, handicraft, and other means of re-education, as well as amusements, music, and entertainment of various kinds should be faithfully and systematically employed, with this object in view. Many patients apparently in the advanced states of dementia, with patience and perseverance, can be gradually awakened from their condition of mental lethargy and brought back to a life of comparative usefulness. Some even improve to such an extent as permits of a return to their homes.

Institutions should possess ample teaching facilities. The various industrial departments, the farms, gardens, etc., should be used to the fullest extent. The wards should be liberally supplied with the means necessary to furnish mental employment of many kinds. The occupation of the insane requires careful study and supervision. The work should be graded, and should be directed in accordance with the degree of intellect evinced by the respective patients. Personally, I believe that calisthenics are of much value as a convenient method of re-education, to say nothing of the physical benefits derived therefrom. They act as a means of arousing the dormant mind, preparatory to the performance of some form of practical occupation. A few months of regular attendance upon systematic calisthenic drills will, in many cases, restore a patient to a fair degree of usefulness. In some instances even those who for years

have been living a vegetating form of existence, are thus often enabled to perform some of the simpler tasks about the institution. It is a fact, however, that the success of occupational and re-educational work among the chronic insane depends largely, and I have otherwise called attention to this same point, upon the tact and personal qualifications of those in charge.

In conclusion I wish to emphasize the urgent need of early treatment in all cases of insanity. It is best that the patient be at once placed in a proper institution. The general practitioner should be able to more readily detect insanity in its incipiency and should vigorously enforce the necessary measures for immediate treatment, for it is an undeniable fact that the sooner systematic treatment is begun the better are the chances for recovery. The existence of a sufficient number of psychopathic hospitals should be assured, where the sufferer may receive adequate treatment and observation prior to a formal commitment by the court to a regular insane hospital or sanatorium. This final measure may not be necessary in many cases and the patient is thus saved much possible embarrassment.

THE STUDY OF MENTAL DISORDERS.*

A. Douglas Singer, M.D., M.R.C.P.,
Director of the Illinois State Psychopathic Institute.

My purpose in this paper is to place before you something of the developments which have taken place in the study of psychiatry with the hope of arousing a wider interest in the subject in the medical profession generally, by showing that advances are really being made, together with a realization of its great medical importance, and at the same time to call your attention to the need for wider recognition and better teaching facilities, especially of a clinical character, in our universities and medical schools. In doing this it seems well to cast a cursory glance over the history of the subject in order to follow its gradual evolution.

Prior to the seventeenth century one may simply state that with but few exceptions the views which were held consisted of belief in the supernatural character of all insanity. Toward the end of this century, largely owing to the enlightenment resulting from the work of the great pathologist Morgagni, there began to appear a definite transition from pure superstition to objective study of the patient. But little, however, was accomplished before the end of the eighteenth century, when there began to be established definite schools of psychiatry. In 1775 Cullen, in England, making use of the work of Locke, formulated a system of psychiatry which was largely free from superstition, and also began the advocation of humane treatment of insane persons as being sick people. The next quarter of a century saw this movement much more firmly established as regards the manner of handling the insane, and

* Read in the Psychopathic Symposium at the Sixtieth Annual Meeting of the Illinois State Medical Society, at Danville, May 17-19, 1910.

with this is inseparably linked the name of Pinel at the Bicêtre Hospital in Paris. He was preceded in Italy by Chiaruggi and was a contemporary in the same work of William Tuke at the Quakers Hospital in York, England. In this country, though somewhat later, a similar movement was begun, largely through the efforts of Dr. Rush. The first real advance, however, in the study of psychiatry, as a branch of clinical medicine, dates from the work of Griesinger, who published a text-book on the subject in 1845. The immense importance of this work lay in the emphasis which its author placed upon the clinical study of cases with careful records of the facts observed which had up to this time been almost entirely neglected. He also probably struck the final blow which demolished supernatural beliefs and firmly established the recognition of mental disorders as properly belonging to medical science. This work of Griesinger was ably carried on and elaborated by his pupil, Krafft-Ebing, whose text-book, still one of the standards in use, was published first in 1879. Like his teacher, he paid strictest attention to clinical phenomena, making careful records of complete life histories, and was one of the first to teach the importance of such prolonged studies, and the emptiness of mere names for purposes of classification. Meanwhile another mile stone is represented by the work of Morel whose doctrines on degeneracy were published in 1857 and have formed the basis of an enormous quantity of later work which has served to modify and limit the somewhat dogmatic views of its author. The great importance of this work lies in the firmer establishment of the relationship between insanity and somatic conditions, and it may be considered as representing the opposite extreme to the supernatural views which had obtained for so long, and the foundation of a material determinism. There can be no question, however, that these doctrines go too far. Morel even formulates a law concerning the changes which occur from generation to generation as degeneracy progresses. In the first he mentions nervous temperaments, moral inadequacy, intemperance. In the second tendencies to apoplexy, severe neuroses and alcoholism. In the third psychic disorders, suicide, mental incapacity. In the fourth congenital defects, malformations and faulty development. These doctrines were modified by the Italian school of Lombroso, which ascribed the degeneracy to a form of atavism, and gave excellent descriptions of the various stigmata which indicated this atavistic tendency.

In more recent times we find that the development of the study of psychiatry has evolved mainly along psychologic lines, and of the schools which require especial mention, those of Kraepelin, Wernicke and Ziehen stand out prominently. Kraepelin has largely continued the work of Krafft-Ebing in the clinical study of cases over long periods of time which may be described as the investigation of a longitudinal section of the disorders, as opposed to the transverse section of most other writers, and he has employed with great profit, in analyzing the material which he has collected, the results of his excellent studies upon experimental intoxications. Wernicke developed the subject along somewhat different lines, depending upon the fact that his interests had centered chiefly in

neurologic problems, with the result that we find an attempt to study more especially the anatomic localization of the disease process in the brain which gives rise to the disorder in its function indicated by the clinical symptoms. Both these authors emphasize especially the need for the study of clinical symptoms with faithful records of the facts without regard to any preconceived notions resulting from the classification in vogue as to what ought or ought not to be present in the particular case. The results have been the tearing down of ancient barriers which had been erected to separate and forcibly restrain time-honored disease groups, and Kraepelin especially has shown that the most obvious are not by any means consequently the most important symptoms, just as had to be done in general medicine when for example the group consumption gave place to tuberculosis and the other disorders in which progressive emaciation is a prominent feature. The particular method of analysis of the symptoms employed by the two schools really supplement one another, and each represents a very decided advance over the vague and ill-defined modes previously employed. Ziehen has evolved a psychology which represents a considerable step forward in that he tries to eliminate all metaphysical inclusions and to place the subject on a purely physico-physiologic basis. In studying cases of insanity he does so from the point of view of this psychology, attempting to localize the symptoms as disturbances in some part of his schema.

The most modern advances in the study of psychiatry depend upon the broader and more scientific conception of mind which has been evolved as the result of all this previous work and in the promotion of which stand out preeminently certain names: Charcot and Janet in France, Freud in Vienna, Bleuler and Jung in Zurich, Adolf Meyer, Morton Prince and many others in this country. According to this conception mind may be defined as the most complex and most highly specialized means of adaptation to the environment. In other words it is a means of rendering possible wider and better selection of the reaction which will occur in response to a stimulus and thus of rendering the individual better able to cope with the complexity of the surroundings in which he struggles for existence. As can readily be seen, this means a complete surrender of all metaphysical views and places psychology in its proper place in the scale of biologic evolution. It does away altogether with any appeal to a separate will or soul, and regards voluntary actions as only more highly specialized examples of reflex action. It means that as scientists we can no longer accept disturbances of will or emotion as causes of any abnormality in conduct or action, and compels us to seek for some interference with the conductibility or irritability of the nerve pathways. Mental processes have been evolved from the simple reflex under the one universal law which governs all biologic improvement, that of survival of the fittest, according to which the individual best able to adapt himself to his environment is most liable to survive and reproduce his kind. We have to realize that an insane person is not one who has a new kind of mind following new laws, but that he has some interference with the physical mechanism of his brain which results in disorder of its

function. It still works on exactly the same principles as obtain in health in so far as the necessary mechanisms are still operative. There does not develop a new manner of adaptation, but the patient adapts himself to the best advantage of which he is capable with the existing state of his brain, on precisely the same principles as formerly.

The immense importance of this conception at once becomes obvious, if one considers the manner in which mental adaptation is developed. Every individual is born with a brain possessing more or less well arranged anatomic systems depending upon heredity concerning which we cannot at present say much that is definite. Unquestionably the basis of truth underlying Morel's doctrines of degeneracy will apply in this place; but the question of paramount importance in the determination of the type of personality or the character of the individual, that is to say his capacity for adapting himself to his environment and meeting the difficulties of life, lies in the surroundings in which he grows up and the education he so receives, and this is true especially in his earliest years. In this lies the most hopeful outlook for psychiatry, because here conditions are more readily open to variation and improvement. The question of heredity is one much less accessible to direction, although even this branch is being widely considered and a society for the study of eugenics has been in existence in England for some time.

These views have been largely the result of careful analytical study of the psychoneuroses, and it has been proved beyond doubt that the symptoms presented in these disorders are produced on exactly the same basis of adaptation to environment which obtains in ordinary conduct. The hysterical symptom is merely the mode of adaptation to an unpleasant and conflicting situation resulting from the individual's inherited brain mechanism and the education he has received. It is the manner of facing some difficult situation which heredity and previous training have rendered possible for him.

Special methods of analyzing the symptoms permit of the discovery of the particular maladjustments present in these cases, and the relation between them of cause and effect is demonstrated by the full and complete recovery which results from reeducation, which is the fundamental principle of all psychotherapy, and by which one means that the individual is taught to adapt himself more satisfactorily.

Similar principles of psychologic analysis are being used, although they are far more difficult of application, in the study of the various forms of psychosis with the result that we find in many cases an exactly similar mechanism at work and this discovery has led to a far better understanding of the significance and manner of origin of many symptoms occurring among the insane. That is to say, we are finding in many psychoses there has been some more or less definite psychic conflict in which the individual meets with conditions in his environment for which his makeup and education have not prepared him, with the consequence that the mechanism at hand is insufficient to the occasion, and there results a disorder in function. If it achieved nothing more than this the time and labor expended in the effort would be repaid because it means

better insight into the reasons for a patient's actions and conduct and consequently a better ability to deal with them with tact and understanding. But far more than this it opens up the possibility of establishing psychiatry upon a firm basis as a branch of preventive medicine, in which direction all our hopes must lie. The vast improvements in the methods of treatment of the insane unquestionably do much to improve the chances of recovery, to diminish the amount of wreckage and to shorten the duration of the disability in recoverable cases but still leave much to be desired in the way of widening the limits of possible recoveries. Consequently anything which holds out any hope of recognizing the actual causes and the mode of their action in causing mental alienation deserves the very closest attention. Already some preliminary steps in this direction have been taken in a study of the psychologic types of individuals suffering from various forms of psychosis which suggest the possibility of recognizing these persons at an early age when prophylactic measures could be instituted. This work has been started by Dr. August Hoch, director of the New York State Pathological Institute. But the subject is still in its infancy and there is necessary a vast amount of difficult and onerous work among normal individuals as well as among the insane and psychoneurotics. It implies careful analytical consideration of the manner of reaction to various kinds of surroundings during the earlier life of patients as well as after the onset of psychosis. To be able to do this means that we must be able to get at the facts of the past life of our patients, and it is here that we need the assistance of the medical practitioner acquainted with psychology, who knows the family and has had opportunities to observe the patient. We need to know the conditions under which the individual has lived and been educated (a term which of course means much more than the school to which he has been).

It may here be objected, as is often done, that psychologic difficulties cannot be the cause of psychosis as opposed to neurosis. This may or may not be true but as Adolf Meyer well says,[1] "Where these facts *exist* we should use *them* rather than wholly hypothetical poisons." Of course it must be understood that I do not mean to deny the influence and importance of somatic factors such as organic brain disease, specific fevers, alcohol, etc., in which there is more or less definite interference with the brain or its nutrition. An immense field for further study lies in the investigation of intoxications and disorders of metabolism even among the so-called functional psychoses, and much work has and is being done along these lines as well as upon pathologic anatomy, although so far without the demonstration of much that is definite. In this connection I would call your attention to the fact that even should such metabolic and toxic disturbances finally be demonstrated it will not necessarily detract from the importance of the psychologic conditions, because in adapting oneself to the environment the organism is adjusted as a whole, including the secretory organs and the involuntary muscle system, under which heading comes the cardio-vascular apparatus, etc.

1. The Rôle of the Mental Factors in Psychiatry, Am. Jour. Insan., lxv, 42.

What we speak of as emotion would appear to be the state of consciousness which corresponds largely to the motor and secretory adjustment. Pleasant moods and feelings of satisfaction accompany adequate adjustment, while depression and perplexity would be the expression of faulty or inadequate means of adaptation. Hence it may well be that the occurrence of some conflicting environment with its disturbing moods and effects which, as just stated, means widespread muscular, vascular and secretory disturbance may by reason of the conflict give rise to disturbances in metabolism capable of perpetuating themselves.

However this may be, we remain well within the facts when we consider as demonstrated that the psychologic factors play a very large part in the etiology of the functional psychoses and, as may be added, also in the developments which occur in psychoses associated with definite somatic etiologic factors. To say this, is only to say that our means of adaptation may be insufficient to cope with the difficulties of our surroundings, or in other words that traumatism may be psychic as well as physical.

It would be impossible in the scope of such a paper as this to give an adequate conception of the advances which have been made but enough has been said to show that psychology and psychiatry have assumed practical importance as well as academic interest and are no longer hopelessly mythical and scientifically unintelligible.

It is unnecessary for me here to enter into any consideration of statistical data concerning the number of insane persons or the great importance of their care from an economic and sociologic point of view, and I turn to the question of practical importance to us as physicians with which I started. Even apart from cases of insanity, a knowledge of psychology is of the utmost importance to every physician. Psychotherapy is coming to be recognized as of paramount value in the treatment of many of the patients one meets in every day practice, and to use this properly a knowledge of the psychologic principles underlying it is obviously essential.

Cases of mental disorder come first into the care of the general practitioner, and he must be able to recognize them early and handle them properly if the patient is to be placed under treatment sufficiently early to avoid damage which may be irreparable. There can be no question that many cases become more seriously damaged owing to failure to recognize the conditions early. I know from experience that a patient is often made far worse and rendered inaccessible to later treatment by a failure on the part of those in whose care he is during the early stages to recognize the nature and meaning of the disturbances in conduct and actions.

Education of the popular mind to the proper views of insanity, to the needs for care in the surroundings of young children, for the regulation of school life and the selection of occupation and even in respect to the advisability of marriage must soon be recognized as duties of the physician.

Without considering questions of forensic importance I have said enough I think to convince you that the subjects of psychiatry and psychology are essential to every physician, and yet the teaching of them is almost limited to didactic work. Very many men graduate as physicians without having seen a single case of mental disorder. That this cry is not new is seen by a passage from the first edition of Griesinger's textbook, 1845, which I quote from a paper, by Dr. Clarence B. Farrar:[2]

The neglect of psychiatry among physicians and particularly in the universities, shows daily its unhappy consequences. They appear in the diagnosis and treatment of fresh cases on the part of practicians, to whose care the mentally ill are entrusted often long before they are brought to the alienist in the hospital. Still more conspicuous are these effects in the forensic activities of physicians.

In the preface to the second edition of this book in 1861 Griesinger writes:

Even now this faculty in the universities is pushed very much into the background, and clinical teaching especially is practically never organized or recognized in accordance with the importance of the subject. . . . The importance of this is so obvious that I live in hopes that soon there will be created regular psychiatric clinics. Only so can the purely medical comprehension of mental diseases, together with the study of morbid mental phenomena attain proper general dissemination, and at the same time render possible the production of physicians who are alienists, and not merely asylum administrators.

DISCUSSION ON PAPERS OF DRS. COHN AND SINGER.

Dr. Frank P. Norbury, Hospital:—Last year when I suggested to the section officers that it would be well to have a symposium on mental diseases, I had in mind just such a symposium as we have had presented to us to-day, the purpose of which is not only to start, but to keep up a campaign of education regarding mental disorders.

We are much in need of such a campaign, not only for the benefit of the medical profession, but for the people as well. For several years we have maintained such a campaign in the State Charities Association, with the hope of reaching the people and the medical profession along the lines suggested here to-day.

Somehow, from a medical standpoint, mental diseases have not received their due from the practitioners at large, who, too unfortunately, look upon mental disorders as being out of the line of the ordinary run of practice, and for this reason not worthy of much consideration. The consequence is, not only a lack of clinical knowledge of mental diseases, but a want of knowledge pertaining to the conditions which contribute to mental diseases, viz., the individual family life, environmental conditions and a study of the individual himself. The time has come when we should by all possible means endeavor to do something that will reach the individual, his family and reach the physicians who have his physical and mental welfare in hand. In other words, we must study etiology, the causes and conditions from which develop mental diseases. The problem involves not only the primary sociologic and economic conditions which enter into the daily life of the individual, but the secondary problems, found in housing of the people, family life, educational advantages, etc., which are a large part of the great problems of modern medicine considered in prevention of disease.

We may not all look at mental disease from this standpoint, but nevertheless such factors are true parts of the whole, and as a result the problem resolves itself into one of educational importance. To facilitate and promote the educational campaign, we should have opportunities for clinical teaching, where all of these several factors in etiology could be presented in a clinical analytical way to the medical student. Mental diseases must be studied by persistent and careful

2. Some Origins in Psychiatry, Am. Jour. of Insan., lxvi, 277.

analysis of all factors entering into each case. To this end, opportunities must be provided such as exist in but few states. Michigan in the West, Johns Hopkins in the East, are the two universities which have awakened to this pressing need. Indiana has ample clinical opportunities which are being utilized in clinical teaching.

Clinical teaching of psychiatry demands the presence of the patient with carefully prepared summary of all of the findings, analyzed so that all factors are presented to the student. The long range and absent treatment of a case, together with certain platitudes and clinical facts, hastily stated, which the student is asked to accept, are not methods of teaching calculated to arouse interest either in teacher or student in this field of clinical medicine. Perfunctory methods are obsolete in medicine as in other departments of science.

The experience which Dr. Singer has in the Psychopathic Institute, demonstrates the value of clinical methods of teaching medical men. The same methods should be used in our medical schools. Our present-day methods in most of our medical schools remind us of the nursery rhyme of the child who wished to go out to swim.

"Mother, may I go out to swim?
Yes, my little daughter.
Hang your clothes on a hickory limb,
But don't go near the water."

Dr. Harold N. Moyer, Chicago:—I want to express my satisfaction with the paper that has been presented by Dr. Singer. I am sure he has put the question of mental diseases and their treatment before us in a very illuminating way. Any one who desires to enter the field of psychiatry would better study this paper carefully, as it shows us where to begin. Emphasis is laid on the unity of mental diseases; Dr. Singer makes no distinction between the man who is a little bit worried for fear something will happen to him and the man who is very insane. These psycho-neurotics are insane in a sense, but not so widely departed from the normal as the man who has lost sense of his position, location and proper functions in life; it is the same thing, only differing in degree. There is a practical side to this question, and I will ask, What have you done as individuals for the psycho-neurotics? Have you entered into any analysis of their mental state? You may have examined the throat and lungs, the heart, and so on, of these patients, but have you made an analysis of their mental condition? Have you not told them, "Take these pills, don't worry, and you will be all right?" Have you asked these patients why do they worry? That is the question. As a result this subject has been a stepchild of medicine, and a most neglected one. This overlooked field has been well cultivated by irregulars, and the present vogue of Eddyism and similar cults is chargeable to professional neglect. It is time that we, as medical men, should learn how to do it. It is a practical question, and one we ought to master not only for the benefit of our patients but for ourselves, because these patients ought to be cured and the only proper person to treat them is a medical man. (Applause.)

Dr. Eugen Cohn, Anna (closing the discussion):—We should indeed realize the importance of educating the general practitioner to recognize insanity in its incipiency, as we all know that the sooner insanity is treated the better is the chance for recovery. Occasionally I have been brought face to face with the fact that the general practitioner at times calls people insane who really do not belong to that category. I have seen a man in delirium from advanced lobar pneumonia brought to the insane hospital after being in a railroad car the greater part of a day sitting up in a day coach, who promptly died on the day following. I have seen a patient with typhoid fever of about three weeks' standing brought to the insane hospital in the height of delirium, only to suffer with hemorrhage of the bowels the day after admission and to die from this disease and the exposure of the trip. I have also seen a woman, delirious on account of a severe case of uremic poisoning who was admitted as a case of acute of mania with death following.

INSANITY.*

SAMUEL DODDS, M.D.
Formerly Assistant Physician State Hospital, Kankakee, and State Hospital, Anna.
CAIRO, ILL.

Gentlemen:—It is not to be expected that we can cover the ground of insanity in one evening. It will be more profitable for us to dwell upon a few of the most important points than it will be to go over the whole subject in a very superficial way. Insanity is too big a subject and too important to be treated thus lightly. It is much bigger than many people think it is. I know a great many who think that the insane are housed and fed and turned out for exercise as so much live stock, and that physicians in institutions for the insane eat three square meals a day at the expense of the state, draw a comfortable salary and do not give very much in return. But the fact is, the man who does his duty in a place of that kind finds plenty to do all day and every day; always something interesting and many problems to solve.

Let us approach the study of insanity in a very elementary way. Let us pretend that we know nothing about it and begin in the a-b-c-class. You will pardon me, I am sure, when I say that there is no other branch of medicine about which so much confusion exists in the mind of the general practitioner as in this branch of mental diseases. At least there is no branch of such magnitude as this, and presenting such an abundance of clinical material, about which there is such a lack of knowledge.

This lack of knowledge is not the fault of the general practitioner. He has been a victim of circumstances. In the first place, it is only within recent years that our medical schools have given any practical lectures and clinics upon this subject; and in the next place, as soon as one is declared insane he is usually sent away promptly to an institution of some sort. Hence, the man in general practice has had little or no opportunity to become familiar with the different forms of insanity or follow them up in their clinical course.

Mental troubles are studied in the same systematic way as are diseases of any other part of the body. Insanity is a generic term. If you say one has heart disease you do not convey any definite meaning; but if you say one has aortic regurgitation or mitral stenosis, then you express something distinctive. So insanity has its classification or separation into the various psychoses, and these have their etiology, pathology (some of them have; not all have been demonstrated by any means)—diagnosis, prognosis and treatment.

We said we would be very elementary. Let us be reminded, therefore, that a neurosis and a psychosis are altogether different things. A neurosis is a disease of the nerve tissue, one of the four primary tissues of the body; a disease of the substance, of the mechanism. A psychosis is a disease (or perhaps it would be more to the point to say a perversion) of the highest function of that nerve tissue: of that intangible thing we

* A lecture delivered before the Alexander County Medical Society, April 21, 1910.

call the mind. The study of such conditions is called psychiatry. The one who studies them is a psychiatrist or alienist.

Now you may find a neurosis and a psychosis existing in the same case, and they may be entirely independent of one another. On the other hand they may be inter-dependent upon the same pathology. This you will find in general paralysis of the insane and in ascending locomotor ataxia. Another good example of a mixed type is an insane epileptic hemiplegiac. Here you have a lesion producing destruction in a motor area, causing degeneration of a motor tract, bringing about a paralysis of the opposite side of the body. At the same time, motor centers in the immediate neighborhood of the lesion are not destroyed; they are irritated, so that at times there are explosions in the form of fits or convulsions. Also at the same time the psychic functions are disturbed.

What are psychoses? What is insanity? I never have seen a satisfactory definition of insanity. I presume that every one who has ever studied the subject has tried to compose one. I know I have. And every man who writes a text-book gives a definition, but you will notice that he always makes some sort of apology for it. Some of these definitions cover a whole page, others are expressed in a few sentences, others in a few words. None has been universally accepted. Suppose we try to formulate a definition and see what some of the stumbling blocks are. Very well. Let us begin by saying that insanity is that departure from the normal mental standard, and there we will have to stop because we do not know what the normal mental standard is. We know what a normal heart looks like, or a normal brain, or a normal kidney, or any other normal organ, but we never saw a mind.

Is there a standard? Is any man perfect in all of the mental attributes? Is he perfect in will power and judgment? Is his memory never at fault? Does he never make mistakes of any kind? Has he always perfect control of his emotions, his passions, his appetites? Is he not over-sensitive? Never unduly elated nor morbidly depressed? Does he never delude himself in any way? Does he always see and hear and interpret things just exactly as they are? Is his ego no larger than it ought to be? Is he properly altruistic, having those finer, higher, ethical feelings toward others he should have; or are his motives purely selfish? Is he not unreasonably suspicious? Never vindictive? Has he no mental twist of any kind; no moral stigmata?

And thus we might mention other attributes in our endeavor to paint the picture of a perfect mind. Did you ever run across such a thing? I never did, either inside or outside of an insane asylum; and while we are fond of demanding a hundred per cent. of efficiency (always from the other fellow), isn't it a fact that you and I get along with, let us say, about ninety per cent. of this and think we are doing pretty well? And does not that represent about the average man, and is not the average man a pretty sane sort of an individual? I think so. I should not wish you to think for a moment that I am one who believes that nearly everybody is on the border-line of insanity. I lived too many years among the insane to have any such notions. While you often hear it stated that the

barrier between sanity and insanity is a very frail sort of a thing, the same is true of the line between bodily health and disease; the man in perfect health at this hour may be stricken before morning.

This thing we call insanity is the departure from the normal standard of the individual; of the particular individual you have under examination. It is not fair to compare John Smith with John Brown. Compare John Smith's condition with what it was last week, or last month, or last year. His state of mind causing him to do and say things strange and unreasonable; out of keeping with his former self, or inconsistent with his present surroundings and circumstances. For example: If an ignorant roustabout should be picked up here on the levee, talking and acting in a strange manner, and you were called upon to inquire into his mental condition, and among other things he would tell you that he had ten thousand dollars in the bank, you would know it was either a lie or a delusion. But if you were called upon to examine a man worth a hundred thousand dollars, who also talked and acted strangely, and he stated that he had ten thousand dollars in the bank, you would not think it unreasonable.

Again, if you should do some of the things I do, people might think you crazy. And I can return the compliment; if I should adopt some of your ways they might think me "nutty."

You see the point, therefore. The study, or rather the diagnosis of insanity narrows itself right down to the study of the individual, and there are no two cases precisely alike for the reason that no two minds are just alike.

Moreover, a definition of insanity must exclude such transitory conditions as the delirium of fevers and the acute intoxications from alcohol and other narcotics. It must also exclude idiocy, imbecility and feeble-mindedness, which are, of course, only different grades of the same thing: arrested mental development, either congenital or acquired.

There may be an insanity following any of these conditions. It may follow typhoid fever or other infection. It may follow the prolonged use of alcohol or other narcotic, or it may be superimposed upon an idiocy, imbecility or feeble-mindedness. That is to say, one may be an idiot or an insane idiot; an imbecile or an insane imbecile; a feeble-minded or an insane feeble-minded, which takes us back to the point stated a while ago: that it is the study of the individual, as an idiot may go along in his quiet, harmless and, with him, normal way for a number of years, then develop delusions, or become unmanageable, and we say he is an insane idiot.

Now I think you can see a few of the difficulties in the way of stating a brief, concise, clear, scientific definition of insanity and why it is that writers upon the subject always find it necessary to define their definitions, so to speak, and I shall not take up any more of your time with this question. It is not necessary, any more than it is necessary to define life or death. We know there are such things.

The classification of insanity has not been perfected. Some authorities have tried to base it upon symptomatology, others upon etiology,

and so on. Like the definition, no classification has been universally accepted. The present day classification is a mixture of etiology, pathology, symptomatology and psychology. I do not see how a pure classification can be made at the present time. When we know more about the pathology of insanity then we will know more about classification. In fact I believe that a rational classification must be based upon etiology and pathology. While there are many forms of insanity such as mania, melancholia, paretic dementia and others that present very characteristic groups of symptoms, there are still a great many that do not; they partake of many forms.

I present for your consideration two classifications. The first is for the alienist, but there is no law against your using it if you wish. While, as I said before, there are quite a number of classifications, the one you see before you is the one used very widely at the present time. It is a modification or amplification of Kraepelin.

CLASSIFICATION.

A. Disorders associated with more or less definite interference with the brain or its nutrition.

I. Infective Exhaustive Group.

Includes cases with this etiology not belonging to other groups.

I*a*. Allied States.

Cases presenting a similar complex but without the etiologic factor.

II. Intoxication Psychoses.

1. Alcoholic.
   a. Pathologic intoxication.
   b. Delirium tremens.
   c. Acute hallucinosis.
   d. Chronic alcoholism.
   e. Paranoiac states.
2. Polyneuritic (Korsakow). Nearly always alcoholic.
3. Drug and food toxicoses.
4. Thyreogenous. (Cretinism, myxedema, Graves' disease).
5. Glycosuria, eclampsia, etc.

III. Psychoses Associated with Organic Brain Disease.

1. Diffuse and focal lesions such as gliosis, Huntington's chorea, hemorrhage, thrombosis, embolism, multiple sclerosis, cerebral syphilis, arterio-sclerosis, tumors, trauma.
2. Senile psychoses. Dementia and deliria.
3. General paralysis of the insane.

B. Disorders of mental adjustment.

IV. Dementia Præcox Group.

1. Hebephrenic.
2. Katatonic.
3. Paranoid.

IV*a*. Allied States.

Cases presenting a marked resemblance but without the dementia.

V. Manic-Depressive Group.

1. Manic states.
2. Depressed states.
3. Mixed states.

V*a*. Allied States.

Cases presenting much similarity but differing either in etiology, symptoms or course.

VI. Anxiety Psychoses.

Including involutional melancholia and other forms of agitated depression not belonging to other groups.

VII. Depressions.

Not included in Groups V and VI.

1. Simple depressions without differentiating features.
2. Symptomatic depression (cardiac disease, etc.).
3. Depression hallucinosis of non-toxic origin.

VIII. Paranoiac States.

Cases without obvious deterioration.

C. Disorders depending upon abnormal personal make-up.

IX. Epileptic States.

(The organic epilepsies belong in Group III).

X. Psychogenic Neuroses.

1. Hysteria.
2. Neurasthenia.
3. Psychasthenia.

XI. Psychopathic Personalities.

XII. Developmental Defect.

1. Idiocy. (Some of these belong to Group III).
2. Imbecility.

XIII. Combined Psychoses.

XIV. Unclassified.

This long and apparently complicated classification is not a practical one for the general practitioner unless he might wish to become a special student of psychiatry. He can use a much shorter one that will serve him amply.

You see before you a short classification, which, while it does not fully cover the ground, by any means, is, at the same time, sufficient for your every day requirements in general practice. The terminology is based mostly upon the symptoms, but such terminology has been used for years and years in this line of work and I think will have to serve us for some time to come.

SHORT CLASSIFICATION.

1. The manias.
2. The melancholias.
3. Mixed states. (Manic-depressive).

4. Circular insanity. (Of a definite type).
5. Dementias.
   a. Primary.
   b. Terminal.
   c. Dementia præcox.
   d. Senile.
6. Toxic insanities.
7. General paralysis of the insane. (Paresis).
8. Epileptic insanity.
9. Paranoia.
10. Organic brain disease.
11. Idiocy, imbecility, feeble-mindedness.

At some future time, with your permission, I shall be glad to take up this classification in detail and go into the matter of differentiation.

I shall say nothing this evening about the general etiology of insanity, but will leave that for our consideration when we take up the psychoses in detail. Rather let us pass on to the symptomatology, which is the important part for the general practitioner to know. It is important for a number of reasons: that he may be able to diagnose a case of insanity coming under his care; that he may give the patient the best treatment; that he may be in position to give the patient's family the right sort of advice; and, finally—and this is very important—that he may act intelligently when called upon to serve on an insanity commission.

It is a serious matter to commit a person to an insane hospital. But it is the right thing to do and the only thing to do if he is in need of that sort of care. While it would be a grievous mistake to deprive one of his liberty, take away his rights as a citizen, and send him away from his family and his business when he ought not to go, on the other hand it might be disastrous to turn one loose who ought to be confined. He might be dangerous to himself or others, squander his property, or commit some depredation. When we act on one of these commissions, therefore, we should be able to give good reasons for the actions we take. Reasons, not only satisfactory to ourselves, but such as would be upheld by an alienist. In other words, when we commit one to a hospital we are virtually making a diagnosis of insanity, and we should be able to give just as scientific reasons for our conclusions as we would in making a diagnosis of any other malady. After serving a great many times with a good many different physicians on these commissions, it has been my experience that one is apt to err on the side of caution—a misguided feeling of sympathy for the "accused"—leading one to give him his liberty. Too often everybody is in a rush to get through. We do not take sufficient time to go into details and bring out the delusions or other morbid conditions present. The doctors are in a hurry; the patient's friends wish to have the matter disposed of as quickly as possible and the sheriff wants to catch the next train.

SYMPTOMATOLOGY.—A very common symptom that strikes the casual observer is the *delusion*. All insane people do not have delusions, but in a great many cases they are very prominent. Delusion means, literally, to cheat or mislead. So one who has a delusion has misled or cheated himself. He has a false idea.

Delusions are of several kinds. They may be of a pleasurable character or they may be painful. Those of great wealth, of high position, or of self importance are examples of the former kind; those of persecution, of unseen agency, of suspicion, of self-abasement, or of a hypochondriac nature are examples of the latter kind. They may be fixed and systematized or they may be fleeting and unsystematized. A fixed delusion is the same old delusion day after day, and it is systematized because the patient reasons about it. Fleeting delusions come and go and are changeable, and they are unsystematized because the patient does not reason about them.

In order to get a clearer understanding about delusions, suppose we take a little trip through the wards of an insane asylum. Here sits a woman arrayed in her cheap finery; bits of lace, scraps of bright colored paper, pieces of tinsel, beads and other trifles which she has picked up here and there, adorn her person. On her head she wears a very elaborate crown made of card board and covered over with gilt paper. If worn by any other patient, these things, to her, would appear as mere trash, but when adorning her person they are emblems of royalty, and when I approach her while she sits there on her imaginary throne, she receives me most graciously and addresses me as "Lord Samuel." And I, humoring her in her assumption, address her as "Queen Victoria." She acts the part on all occasions, whether in the ward, on the lawn, or at the weekly dance. A quiet, harmless, hopeless, happy *paranoiac* (formerly called a mono-maniac), in many respects the insanest of the insane, and often the most dangerous, with *fixed, systematized delusions of a pleasurable kind* in this particular case. Fixed, because they are there to stay; systematized because by some psychologic process, unknown to any one save herself, (and perhaps she could not explain it), she has added one stone after another to this artificial edifice, this new personality, and behold—a queen! The fact is, she is of very humble origin, has little education, knows nothing of history, is ignorant of Queen Victoria's lineage, and yet, by some "hocus pocus," she has convinced herself that she is the real Queen. As paranoia is not inconsistent with long life (so long as a paranoiac does not attack a president or a crowned head), let us hope that her reign may be as long as was that of her distinguished prototype.

Now let us go over on the male side of the house and see what we can find. We are greeted by an extremely friendly indiviual who shakes hands with us in the most cordial manner. He is the embodiment of good nature. Ask him how he feels; he never felt better in his life. If he had a good dinner? The best dinner he ever ate. "Beautiful day, isn't it?" "The finest I ever saw." "Are you married?" "Married? Well I should say I am married. Got a wife in Chicago, one in New York, one in London, Paris—wives everywhere." "Have you any chil-

dren?" "Children? You ought to see them. Children by the carload." "How are you fixed, anyway?" In answer he will write you a check for a million or any amount you might wish. Take him over to the window and examine his eyes and you will see that he has the Argyll-Robertson pupil. Look at the pupils more closely and you find that one is perhaps twice as large as the other and both of them irregular in outline. He cannot walk the seam of the carpet or stand still with his eyes closed because of ataxia. Test his knee-jerks and you find them extremely active. There is trembling of the tongue and of the finer muscles of the face and he has a very peculiar manner of speech. He falls over certain sounds, particularly the l's and r's. He speaks with a kind of shu-u-u-d-der— as one shivering with the cold. Difficult for me to reproduce, but when you once hear it you will never forget it. This man is in one stage of *general paralysis of the insane* (paresis, dementia paralytica, chronic diffuse meningo-encephalitis), and he has *fleeting, unsystematized delusions of grandeur.* His reign will be short.

Here sits another who is not quite so happy. In fact he is very unhappy. He sits with his head between his hands, with his eyes closed and with fingers stuffed in his ears to try to mitigate the unpleasant sights and sounds. Get him to look at you and you observe that his face is the picture of despair. He is suffering mental torment. If you gain his attention and confidence—not always an easy thing to do—he will tell you that he has committed some terrible sin and that there are people pursuing him who intend to administer some horrible form of punishment. He has one of the forms of *melancholia,* with *fixed systematized delusions of persecution.* They may hang on for six months or a year, or two or three years before he gets rid of them. He may never be rid of them.

Now we find ourselves in a back ward. A back ward in hospital parlance is one extending back from the main wing and has a more or less disturbed class of patients. There are fewer patients and more attendants in proportion to the front wards, so that there may be better surveillance. In bed is a very noisy patient. He talks incoherently—his flow of ideas is too rapid for his speech to keep up with, or the ideas themselves are disconnected. He talks, laughs, cries, preaches, prays, swears all in the same breath. He is violent. He may strike you if you go near him. There is great motor excitement; his body is in constant action; he gesticulates and makes grimaces. If offered water he will knock the cup from your hand. He refuses food and has to be fed with a tube. This sort of a case is called an *acute maniac* but the newer classification puts him in the manic-depressive class because a great many of them (some authorities claim all of them) have *fleeting, unsystematized delusions,* which are at times of an *exalted* character and at other times *depressed.* Be that as it may, in making out the papers in a case of this kind, when acting on a commission, you will be perfectly safe in diagnosing it as acute mania. He may recover very rapidly.

Let us go over to another building, where we shall find a still different class of patients. Here is one who would rather lie on the floor than sit in a chair. His favorite position is lying with his head resting on one arm, his coat drawn up over his head and ears. This may be the remains of a habit he acquired when passing through his acute insanity. When he looks at you you see how expressionless is his face. The emotional lines are practically wiped out. He answers in monosyllables, or answers not at all. He performs everything automatically. He responds to the dinner bell largely through force of habit, and when the attendant calls him to go for a walk he exchanges his slippers for shoes because he has been taught to do so. If not properly trained his habits will become very dirty. He goes through everything in a routine way. If you ask him what he had for dinner, he cannot tell you; maybe cannot tell you whether he had any dinner at all or not. He has no delusions, or if so, they are mere vestiges of the insane ideas that possessed him years before. His mind is a blank. He has *dementia;* lack of mind. You often read in a newspaper that so-and-so became suddenly demented. That is not the case. He became suddenly insane, but might never reach the stage of dementia.

There are two other symptoms of insanity that are very interesting. They are called *hallucinations* and *illusions*. All insane people do not have them, but in others they are very marked, illusions being the more common of the two. Hallucinations and illusions have to deal with the five senses, the former being false sensory concepts—something originating wholly within a sensory sphere, while the latter are false sensory impressions, based on something external but registered wrongly within. For example: I look away through space where there isn't anything but ether and I think I see an air ship. That is a hallucination of sight, a visual or optical hallucination. But suppose I look away through space and there is really something there to see, a cloud, but I mistake it for an air ship; that is an illusion, a visual or optical illusion. Again: Suppose I look here at the bare floor and imagine I see a dog. That is a hallucination. But if I look at that chair and mistake it for a dog, then I have an illusion. Or: Suppose there is no sound at all and yet I think I hear a voice speaking to me. That is a hallucination of hearing—an auditory hallucination. But suppose there *is* a sound—a bell ringing, or steam escaping from the radiator and I mistake the sound for a voice, then I have an illusion.

Thus there may be hallucinations or illusions of any of the five senses, and as you have noted, the difference between them is that the hallucination has no external object to base the sensation upon while the illusion has. Hence a blind man may have hallucinations of sight or a deaf man those of hearing, but neither could have illusions of these respective senses. To have hallucinations, however, a blind man must have had vision at one time and a deaf man hearing, in order that sensory impressions may have been stored away, for the same reason that a deaf mute cannot talk who never heard articulate speech.

You frequently see the words delusion, hallucination and illusion used synonomously. They are altogether different. Delusions have to deal with the mind; hallucinations and illusions with the five senses. How often you notice trained magazine writers and others using the word hallucination or the word illusion when they mean delusion or vice versa.

Now while delusions, hallucinations, and illusions are very different, they are often closely related. For instance: Suppose I have either hallucinations or illusions of hearing, but I say to myself: "Nonsense. There is something wrong with my hearing apparatus," and thus reason myself out of it. Well and good. But, say that my mind is in such condition that I cannot correct the false impression; in other words, I *believe* it, then I have a delusion about it. So you see how easy it is for a delusion to be based on a hallucination or illusion and how it is possible for them to reenforce one another.

There is another large group of symptoms called *imperative conceptions* or *ideas.* This term includes the many morbid impulses and obsessions not properly coming under the head of delusions, hallucinations or illusions, and they range all the way from the milder grades of fears and anxieties in neurasthenia on up to the most intense mental suffering, where it is frequently difficult to distinguish between an obsession and a delusion.

These symptoms may exist along with any of the classical forms of insanity, but they often exist alone and are the sole sign of anything being wrong mentally. Under this head come *kleptomania* and *pyromania* and the morbid desires, appetites, and habits of the moral and sexual pervert; the uncontrollable sexual desire in the male, called *satyriasis,* and in the female *nymphomania;* and the perverted appetite for filth, as seen in some forms of insanity.

There are many kinds of phobias. One will tell you that he is afraid to venture out into large open spaces—*agoraphobia,* so-called from the word meaning the public square or town market. Another is afraid of closed places—*claustrophobia,* and will tell you that he cannot remain long in a theater, hall, church, or other place of assembly because of a feeling of suffocation. He is impelled to get out into the fresh air. Another is afraid to be left alone—*monophobia;* others fear to venture in where there are large crowds of people.

Morbid impulses lead to the most extraordinary, absurd, or dangerous acts: The impulse to jump from a high place—that is, the fact of being on a high place leads to the uncontrollable desire to jump off; picking up a butcher knife and wielding it in a murderous fashion upon whomsoever happens to be in the way—the mere presence of the knife suggesting the act; self-destruction with a razor or revolver, or by casting ones self in front of a train, because the weapon or train happened to be on hand at the psychologic moment and not because of a pre-conceived notion of suicide.

Obsessions are often described by the patient as "foolish thoughts." He cannot banish them from his mind. Sometimes they take the form

of repetitions of meaningless words and phrases, such as; "Punch, brothers, punch with care, punch in the presence of the passenjare"—which kept Mark Twain and others awake at night. In others these repetitions take the form of the most extreme blasphemy or obscenity and of course, to one unaccustomed to thinking in such terms they are a source of much mental suffering.

There is a condition which the French call *"folie de doute."* The victim spends hours and hours debating with himself over the pros and cons of a very trivial matter that he ought to be able to decide offhand; but he takes a whole day for it, and at the end of that time is as much confused as we doctors sometimes are over a diagnosis.

Recently I had under my care a neurasthenic who had very troublesome obsessions. For example: He said he would lock up his store at night but after he got home he would begin to wonder whether or not he had really locked the door. While he was reasonably sure that he had done so, yet he could not remember the circumstances in connection with actually locking the door, so he would have to go back and see about it. Then maybe after he got home he would have to go a second time, to make sure, before he could become sufficiently composed to lie down and go to sleep. All this time his better judgment kept telling him that he had locked the door and that he was giving himself needless worry, yet he could not dismiss the troublesome idea from his mind. Then, too, the Pelly tragedy worried him very much. He brooded over it a long time. Everything he read in a newspaper that in any wise suggested that terrible affair, would bring it back in all its horror and vividness until he almost had delusions about it; his thoughts taking the absurd turn that possibly the reason he could not dismiss it from his mind was because he might in some remote way be responsible for it. During the past winter I saw two cases of insanity with delusions concerning the Pelly tragedy. You see insanity is usually up to date: Wireless telegraphy, aeroplanes, comets, etc.

As a rule, one with obsessions or morbid impulses realizes fully his sad plight and appeals to you to do something for him. He cannot concentrate his mind upon sensible things or control his thoughts, and he fears he might commit some overt act. He fears that he will lose all self-control and become insane. A great many people in this condition have voluntarily committed themselves to hospitals for treatment.

Now, as a matter of fact, one who has delusions, or hallucinations, or imperative ideas, will, sooner or later, manifest it in some way. But he may give just a slight manifestation of it, offering us only a very faint clue to work upon. If, when you are called upon to examine a person with a severe bellyache, you could always find intense pain over McBurney's point, rigidity of the right rectus muscle, a well-defined tumor in the right lower quadrant of the abdomen, the right leg drawn up to relax muscular tension, nausea and vomiting, obstinate constipation, a rise of temperature, and if the patient would very obligingly tell you that he had suffered previous attacks and that several physicians had told him that he had appendicitis, but he didn't believe it, the diagnosis would be very easy.

In the same way, if all those who have delusions, hallucinations, illusions, morbid impulses and the like would be very frank about it, open right up and tell us everything they have in mind, psychiatry would not present so many difficult problems as it does; frequently some of the toughest kind of problems, not only from a medical standpoint, but also medico-legally.

I have known insane people to hide their thoughts for an indefinite period. In some cases it is because they think it is none of your business; in others because of natural reticence; again, because of some fear—that they might make bad matters worse, or might be ridiculed or criticised. Sometimes they do it from sheer cunning; again because they believe they have been commanded by some supreme power to remain silent; and there are many others who are in no condition to tell anything, they are too confused and incoherent. How, then, will you go about analyzing such cases? It is important that it be done. The safety of the patient, or that of his family, or that of the community may demand it, and it may mean everything in the way of prognosis and treatment.

Here is where you start out to become a mind-reader. You play Sherlock Holmes and reason by deduction.

When at the bedside, fulfilling about the noblest mission that comes within the province of a physician, and you have assisted a little eight-pound speck of humanity to make his entrance upon this stage of life, but he fails to make himself heard; you very rightly conjecture that something may be wrong, for you expect him to make a fuss about it. There are some, I believe, who claim that his cry is a reflex act, but I am of the opinion that it is largely an expression of emotion, a protest against being thus unwittingly thrust into a cold world. He is registering his first kick. Then the next day when a pin pricks him or he is otherwise uncomfortable, or in a few days when his little "tummy" begins to hurt and he finds that by using his vocal organs he can secure first aid to the injured, I am still further convinced that he has emotions. Then, too, soon he learns how to fool his fond and doting parents; how to get them up at night and make them walk the floor, all because they did not train him properly the first day or two of his life.

Before long, however, a more agreeable emotion is manifest, he begins to smile and crow, and from now on, through the seven ages of man, from the cradle to the grave, he runs the gamut of all of the emotions; every shade of feeling—joy, friendship, affection, grief, sympathy, hatred, envy, jealousy, anger, rage; a lifelong kaleidoscope of sunshine and shadow, affecting not only himself but likewise everyone with whom he comes into contact. He is never free from emotions of one kind or another. He is not always conscious of them but they are there just the same, whether at work or at play; dreaming or awake. Then he learns something from education. Either through home training or by contact with the world he learns repression, inhibition; how to control his emotions. Still there are times when it is sane and proper for him to give expression to his emotions. There are certain situations in life when it would be unnatural, not to say impossible, for him to feel or

express no emotion of any kind; never to laugh, never to weep, never to resent, never to forgive. When he reads an interesting tale it sends a thrill through him. If fond of a good horse, the excitement of the race stirs up his sporting blood and quickens his pulse. When a member of his favorite team knocks out a home run he doesn't know whether it is his hat or the other fellow's he is beating up. Should he have music in his soul there are certain climaxes that will send quivers up and down his spine and there are certain plaintive passages that will lodge a sob in his throat and make tears well up in his eyes. He goes to see the same old melodrama and sees the same heroine out in the same snowstorm pursued by the same villain and gets the same thrill he always got. He starts out on his day's work; something disagreeable happens the first thing in the morning, upsetting his emotions for the rest of the day, and unless he practices repression he is very apt to insult somebody before night. Practically everything is a play upon the emotions. There is this everlasting stream of feelings of all kinds, of every shade and color passing athwart the human mind; a necessary part of the mentality, and I have mentioned this at some length so that we may be impressed with the fact that when the mind becomes unbalanced, *disturbance of the emotions* must necessarily follow.

There are disturbances of the emotions, of course, that are not necessarily signs of insanity. Some of us, unfortunately, are so constituted that we are naturally peevish and irritable and not very good at repression. There is the spoiled child who knows how to get what he wants by having a tantrum. There is the woman who knows how to work "hubby" with a few tears. Others (both men and women) of a querulous nature whose emotions will not become tranquillized until they stir up a mess of some kind; have a row with somebody; "tell him what they think about him." Then there is the man who commits needless murder because he happens to be a pistol-toter. But in insanity the disturbance of emotions is characterized by exaggeration, prolongation, and lack of inhibition. As examples, the unnatural and unwarranted states: Of exaltation, *mania;* of depression, *melancholia;* of egotism and suspicion, *paranoia;* of grandiosity and expansiveness, *paretic dementia.*

There may be an absence of emotions, *apathy.* Apathy is real or apparent. Real apathy occurs in dementia, all grades of it, because there are few or no mental processes going on to create emotions. There are other cases that appear to be apathetic but they are not. The victim is possessed by some terrible delusion and if you will watch his facial expressions and actions for a sufficient length of time, you will observe that within there is a turmoil of emotion, but outwardly there is little or no expression of it.

The insane person's face and acts express pleasure, anger, surprise, contempt, derision, suspicion, just as they did when he was sane. Why shouldn't they? But his reason for feeling as he does may be altogether wrong, an insane idea back of it. On the other hand he may have just cause for his feelings, a perfectly normal emotion. He takes pleasure at the weekly dance or other amusement; the strange delusions of his

neighbor strike him as being funny; he is angry because of an insult; he is afraid or suspicious because he may be receiving harsh treatment. So that every thought or act of an insane person is not a manifestation of a delusion by any means.

Therefore, through a proper interpretation of the emotions, as expressed by the patient's face, acts, habits, dress, attitudes, and speech (provided he will talk at all, and even voluntary mutism is suggestive in itself), we get some idea as to what is passing through his mind. We try to figure out what is back of it all. In other words, the *motive,* for be it understood insane people have motives. A very common notion is that they do not have; that they are utterly wild, wholly without reason, acting as one in a high state of delirium. That is characteristic of only a small percentage of the insane. The fact is, an insane person has a reason for practically everything he does. It may be a very insane reason, but it is sufficient for him, and he acts upon it. Here is an example from real life. I am making a call on a back ward. The seats are arranged along on either side of the hall; large wooden chairs screwed down to the floor to prevent them from being used as weapons. Each patient has his own chair in order to avoid confusion. A patient gets up and goes down the hall. Presumably he is going for a drink of water or to the toilet. No one interferes with him. All at once he stops and smashes another patient in the face with his fist. Then he comes back and sits down in his chair and says not a word. But he clenches his fists, grits his teeth, his face is blanched and his breath comes in gasps. He is mad through and through.

Said I, "Pat, why did you do that?"

"Didn't you hear what he called me, Doctor?"

"No, Pat, I didn't hear him say anything."

"Didn't say anything! No, I guess not. He's been sitting there for the last half hour calling me everything he could lay his tongue to and I stood it just as long as I could. I'll kill the blank blankety blank, that's what I'll do for him." And he would, too. His hallucinations of hearing make of him a very dangerous patient. You see he had a motive. In fact two of them. The first was to resent a supposed insult; the second was to go about it in such a way as to excite no suspicion. Some one might ask what sort of punishment was administered in order to prevent Pat from repeating such a performance. None whatever. No punishment of any kind, nor anything that might be construed by the patient as such can ever be permitted. It is not only cruel but it adds still further to the troubles of the insane mind. It tends to fix and magnify his delusions and suspicions.

Insane persons are amenable to reason and to kind treatment. They mean to do right, as a rule, as nearly as they know how. They are not criminals; they are unfortunates. So I sat down on the arm of Pat's chair and reasoned with him. I reminded him of the times when on my morning rounds he told me about people who came to his window at night and called him all kinds of names and how he would get up and swear at them and try to drive them away. How I had explained to

him that he had something wrong with his hearing, causing him to imagine that he heard voices; that we would not allow any one to come about annoying him or any one else. "And now," said I, "Pat, this is another case just like that. Your hearing has been playing tricks upon you again, and if you could, in some way, reason yourself out of it you would get well and go home. That is all that is keeping you here."

"Well," he replied, and he was considerably mollified, "you may be right, Doctor, but how am I to know?"

He asked me too hard a question.

If an insane person will talk, of course we can learn very much more about his condition of mind, even though he may talk but a little and that incoherently. For instance, he may talk to himself. That is always suggestive. Sane people sometimes talk to themselves but they are only thinking aloud. When an insane person talks to himself, whether in a loud voice or in a whisper or merely moves his lips, it usually means that he is conversing with some imaginary person, answering some voice, or that he is talking to some person or object he thinks he sees before him. So he evidently has hallucinations or illusions of sight or hearing, or all. Hallucinated individuals stand at the window and rail at their imaginary foes on the outside, just as Pat did. They are especially apt to do this at night when there are fewer extraneous sights and sounds to distract them from their hallucinations.

Incoherence may come about in several ways. It may be due to an accelerated flow of ideas, or, on the other hand, to a paucity of thought, a diminished flow. It may be due to aphasia, or accompany the delirium of toxemia. In other cases it is due to disorientation. Orientation is the faculty the normal person possesses of locating himself properly as to time, place and personality. One who is disoriented may not know where he is, what day or year it is, may not recognize his family or friends, or even know who he is himself.

The *memory, will power, judgment* and *degree of inhibition* should be studied, but I shall not dwell upon these any further than to say that the memory in some cases is very acute. This is especially noteworthy in periodical mania and in the maniacal phase of circular insanity, the patient calling to mind and taunting you with all of the mean and tantalizing things he ever heard about you. Some persons will pass through a most violent attack of acute insanity and yet when they emerge from it can tell you practically everything that transpired. In other cases the memory is very defective. Memory is the storing away of sensory impressions and recalling them through an effort of the will or by the association of ideas. If the senses convey no impression of an event, there can be no memory of it; or if the receiving part is damaged, the event can make no impression. In senility the memory may be very fair for events long past but very poor for recent occurrences.

The patient's writing often gives us valuable information. He will sometimes write freely about his delusions when he will not talk about them. The handwriting itself is in some instances very characteristic, as in general paralysis of the insane.

Now the foregoing symptoms, which I have been trying to describe, are, as a matter of course, not all present in a given case. Some patients will have a few, others many. Some will have obsessions, others delusions; others will have added hallucinations or illusions or both. Some will be violent, or destructive, or suicidal, or homicidal. You see there may be all kinds of combinations of symptoms. We must try to interpret what we see: a hint, an act, a suspicious move, and we must not forget to weigh carefully the evidence of the patient's family and intimate associates, taking their testimony for exactly what we think it to be worth, because, sometimes, in their eagerness to have the matter disposed of, the friends will overstate things, not realizing that a plain statement of facts might be sufficient to establish the insanity.

Each case is a little different; you are studying a separate individuality; a distinct *ego,* a self that wills and thinks and feels and acts. An "I," the personal pronoun "I." As John Kendrick Bangs calls the ego, "I, I, Meself." So, when you have analyzed this "I, I, Meself" and have diagnosed an insanity, you may still be unable to classify him. He may be in a class all by himself. But ninety-nine chances out of a hundred he will come within the short classification I have presented to you.

Finally, insane people may have any kind of disturbance of the bodily functions: Of sensation or motion; of the alimentary tract, the emunctories or metabolism; disorders of temperature or circulation. There may be abnormal urinary constituents or cessation of menses. And there may be present real pathologic conditions (aside from any we would naturally search for in the brain or nervous system):—Diseases of the organs in the chest, abdomen or pelvis; of the blood or blood vessels; tumor, cancer, alcoholism, drug habit; tuberculosis, syphilis or other infection—the insanity being a mere incident.

In conclusion I wish to say that I hope the day will soon come when the state institutions will have clinics where graduates in medicine may go and familiarize themselves with this important branch of our profession, and then some day, insanity will be placed where it properly belongs, in the category of preventive medicine.

THE NURSING SPIRIT.*

WILLIAM C. GRAVES,
Executive Secretary of the Illinois Charities Commission.

In nursing the sick, as in any other art, a spiritual fitness for the service is necessary to success. The physician who inspires confidence in his patient by his healing spirit wins the battle against illness more quickly and more completely because of the stimulated hopeful attitude of his patient. Psychology, thus applied, is the militant aid of medicine and the knife, even in those desperate straits where heroic medical treat-

* Read at the Commencement Exercises of the Training School for Nurses of the Lincoln State School and Colony, May 27, 1910.

ment, or surgical interference, tides over a crisis for a patient who is conscious of what the doctor is trying to do to help him.

The same holds true of the nurse. Perhaps spiritual fitness in a nurse is more essential to the relief and cure of a sick person than is the same quality in a physician. The nurse is in charge practically all the time. The doctor, as a rule, sees the patient at intervals. Hence it is a fundamental necessity that a nurse who wishes to succeed in the largest sense of the word must have the genuine nursing spirit. She must love to care for the sick. She must find her greatest delight in gentle ministration to them. She must receive her greatest compensation in the realization that persons curably ill are restored to health and the pleasures and comforts of life as the result in part of her tender and intelligent care; and that those who die pass into the great beyond soothed by the knowledge that a sympathetic soul is watching over them.

These statements may sound like the thunderings of a sermon, or like a scolding, in a period when too many nurses are coldly scientific in their service. If this is a sermon, very well! Let it be one. I have seen ultra-scientific nurses. It would appear almost that they suppress the sympathy, the tenderness, and the mothering instinct that are supposed to well up in the hearts of all women in the presence of illness and suffering, because it is wearing upon them to expend nervous energy in sympathy and the like, although they perform their specified duties with religious fidelity. Many of these women are most capable scientific nurses, but, if you were ill, which would you prefer, to have one of them care for you or one of those heaven-sent creatures whose gentle touch and whose encouraging words are added to scientific ministration as an anodyne for your troubled heart and a stimulant for your apprehensive spirit? If you were ill, it would not take you long to make the choice, would it?

Incident Illustrating the Nursing Spirit.—I recall an incident in the Cook County Hospital, Chicago, of a recent summer, which illustrates what I am trying to state. It was during a period of intense heat. In the congested areas of the great city the poor were driven out of their homes at night. The houses, three deep from the sidewalk to the alley, were like bake ovens. Women lay in the street gutters, their heads pillowed on stones, or on the edge of the sidewalk. Their babies lay beside them. Older children slept on garbage boxes and sidewalks. Men slept where they could find a breath of air, sometimes in open drays. Every morning the newspapers had columns of names of those who had died from or had been prostrated by the heat the day before. All the hospitals were congested with heat cases.

During one of these stifling nights an inspector visited the Cook County Hospital. In a certain bath room was a heat case wallowing in a tub of ice water. He was a Pole. He was muscular, his hair in a tousled mass was matted down over his eyes, his hands were knotted from hard work, he was indescribably filthy, and he kept up a combina-

tion moan and articulation of words nobody seemed to understand. His temperature was bumping the top of the tube. His death was a matter of a few hours.

Beside the tub containing this brawny laborer stood what the novelists call "a slip of a girl." She was eighteen years old. Her brown wavy hair, her large, blue eyes, set far apart and tender but full of the spirit of conflict, and the softness of her skin and the pink that came and went in her cheeks when she performed some unpleasant task, presented a striking contrast with her uncouth patient. She was working over him is if he were her sick baby. She was genuinely mothering a hulking, strange, sick man. When this young nurse paused for a moment in her exertions, the inspector, who had been looking on, said:

"You seem to be taking pretty good care of that poor fellow."

"He needs it," she replied.

"Who is he?" the inspector asked.

"I don't know," she replied, "but I do know that he has had a hard time and that he is very sick. The police brought him in."

"Do you think you are able to cure him?" the inspector ventured.

"Yes, I do!" she cried. "He *must* get well!"

He died in the early hours of the next morning. The nurse's battle was a losing one. When the inspector was at the hospital again, he asked her how it was she was so sure that patient would recover. She smiled and said:

"I never give a patient up unless he is dead. I am a *nurse.*"

So she was. That young girl exemplified what I mean by the nursing spirit.

The Ideal Nurse.—Now there are nurses and nurses. Some are natural nurses, who possess only the nursing spirit. Some are scientific nurses, machine nurses, you might say, who secretly believe and some times openly affirm that they are just as competent as, or even more competent than, doctors. Some are nurses "for the fun of it." Some are nurses because they are pretty. Some are nurses because they are rich and don't know what else to do with their time. Some are nurses who work in sole anticipation of the "day off." Some are nurses only for pay. Some are nurses, who, like the bibulous and cucumber-loving Mrs. "Sarey" Gamp, think of their comfort and not the patient's welfare, and, also, "stand in" with an undertaker who is "right." Some are nurses whose business I do not care to discuss before you. None of these nurses is fit for service in the Illinois State charitable institutions, nor in municipal or private hospitals, nor in families in these days of progressive and high grade care of the ill. The ideal nurse, I think, is one who has the nursing spirit, who is neat, good and wholesome and who has acquired and can apply scientific knowledge of the art of nursing under the direction of a competent physician or surgeon. It is this sort of nurse that the state of Illinois is trying to develop in its charitable institutions, by selection through the civil service, by courses in institution training schools and by the practical experience of service.

Four Years Ago at Lincoln.—Perhaps some of you are not aware of what Illinois has done to modernize its nursing service since the awakening four years ago. To illustrate this let me turn back the pages of history and read to you from a report to Governor Deneen of an inspection of this institution—then known by the repellant title of the Illinois Asylum for Feeble Minded Children—made by the State Board of Charities, in April, 1906. In referring to this dark, closed chapter, I have in mind the criticism of no individuals, but of the primitive system then in vogue. Some paragraphs from this report read as follows:

The medical administration is defective. Practically no diagnosis is made. Hospital records, as kept, are practically valueless. There are no trained nurses in the modern sense. There is no training school for nurses. No pathological work is done. There is no dentist. * *. * The infirmary building is well adapted to its purpose, but it is unscientifically managed. Mrs. ....., in charge of the hospital, is not a graduate of a training school for nurses. Nor is any other nurse there. There isn't a history sheet in the place.

The records kept by Mrs. ..... are in small school composition books with paper covers, one for girls and one for boys. The names are not arranged alphabetically. The entries give name, date of admission to infirmary, date of discharge and disposition of the body in case of death as "buried here" with the initial of the undertaker's last name, or "sent home."

In a few cases there is an attempt at diagnosis as follows: "Sore eye," "sprain," "looking bad," "croup," "has fever," "eczema," "bad burn," "sore mouth."

One entry identifies a patient who had died as "a little darkey." There is no diagnosis in this case; no history of the sickness. But the name is given.

Mrs. ..... said she burned her record books as soon as they were filled, as she understood complete medical records were kept in the main office.

At the administration office Dr. ..... said there was no medical history books, but merely the fact of death was recorded along with the disposition of the body, but later he produced a book which he said he had forgotten. It is a small paper-covered book called "physicians' hospital report." It gives the date of admission to the hospital, name of patient, primitive diagnosis, and date when parents or friends were notified of the illness. Here it ends. For discharge or death one must refer to Mrs. .....'s hospital composition books, etc. A sample entry in this "physicians' hospital report" is as folllows:

"December 24, 1905, Lucretia Nichols, rheumatism." Some of the other diagnoses in this book are as follows:

"Lung troubles," "stomach troubles," "very poor health," "heart trouble," "eczema, very homesick," "general run down," "growing weaker," "worse," "failing in health," "does not improve," "poor health and worse."

There are in the administration office three old volumes of medical records dating back to Jan. 1, 1884. They give brief medical histories of the various cases, school programs, date of admission, age upon admission, date of discharge; also application number. The records in these volumes run up to Oct. 22, 1899, and stop there.

The medical records at present are those kept at the infirmary by Mrs. ....., the nurse in charge; certain items in application papers; the spasm books, which record the number of epileptic seizures patients have, and death and burial entries in office records.

While the infirmary has a modern operating room, there is no operating table there, no cabinets of instruments and no sterilizer. The place is used, apparently, as sort of a reception room. Vases of flowers are to be seen. Dr. ..... said there were operations occasionally. In the drug store in the main building is a case of cranial instruments and pocket cases. * * *

There is no laboratory for pathological research. Chemical examinations of urine are made. No microscopic work is done. Mrs. ....., head of the

hospital, said there had been two post-mortem examinations in the seventeen years she had been at the institution. Those were requested by relatives. Apparently a vast amount of precious live and dead scientific material for the study of defective children is going to waste at Lincoln. * * *

The attendants and nurses are recruited from extra employees, i. e., men who cut grass, shovel coal and drive horses, and women who begin service as domestics. As they "show their fitness" * * * they are advanced to be attendants and nurses. The only hint of a training school is general instruction given by the doctors to those nurses who serve in the infirmary.

There is no registered pharmacist as druggist. Prescriptions are compounded by the doctors. Some of the simples are mixed by women.

The teeth of the patients, as would be expected in feeble-minded persons, are defective, and appeared to be neglected. Dr. ..... said he had no dentist. The doctors pull teeth.

There is a medical library at the institution.

Sixty per cent. of the patients * * * are said by Dr. ..... to be tuberculous. No attempt has been made to determine the number of cavity cases and segregate them. A few moribund patients are kept in small rooms off the general hospital wards in the infirmary. Metal grilles in the doors of these separate rooms make possible a general circulation of air from the consumptives to the general patients in the wards outside. One woman, a patient in a separate room, spat so wildly that sheets were spread on the floor and walls to catch the sputum. These sheets, Dr. ..... said, were treated with formaldehyde and then cleansed in the general laundry along with other institution bed sheets.

All this was inexcusable and indefensible, in view of the fact that modern medical administration and trained nurses were available in this institution four years ago, but, barbaric as the situation at Lincoln was, as shown in the report from which I have just quoted, many of the aspects of the service then were quite excellent compared with nursing standards of less than one hundred years ago. Trained nursing is a comparatively recent art.

Some Old Rules for Nurses.—As late as 1830 nurses were often of the lowest character. No attempt was made to educate them. Some of the old rules show an endeavor to curb their improper habits. For instance in an old English hospital, in 1557, the nurses were admonished to "eschewe all . . . skoldings, swearings and drunkenness." Scolding and drunkenness must have been sources of complaint against nurses in those days for again we find an old rule of the date of 1580 which instructs them to "avoid, abhor, and detest scoldings and drunkenness as most pestilential and filthy vices."

Some curious duties of nurses are set forth in rules of an early date of the old English Hospital of St. Thomas, London. The nurse, according to these rules, "must keep and scour the cans for beer; the broth pails, pans, plates, etc., soiled at dinner. She must attend the butler at the ringing of the beer bell and take with her such patients as are able to carry the beer in safety to the wards and not suffer such patients to waste or embezzle it by the way, but see that the cans be carried full into the ward." In like manner it was the duty of the nurse to attend to the bread bell and the cook's bell.

Dicken's Description of "Sarey" Gamp.—Perhaps the most accurate description of a nurse, or I would better say of the incompetent and brutal nurse, antedating the period when the work and example of

Elizabeth Frye, Florence Nightingale and Dorothy Dix flooded the hospitals with sweetness and light, was "Sarey" Gamp, the creature referred to previously herein as bibulous and fond of cucumbers. Charles Dickens, in his Martin Chuzzlewit, describes her as follows:

She was a fat old woman, this Mrs. Gamp, with a husky voice and a moist eye, which she had a remarkable power of turning up and only showing the white of. Having very little neck, it caused her some trouble to look over herself, if one may say so, to those to whom she talked. She wore a very rusty black gown, rather the worse for snuff, and a shawl and bonnet to correspond. In these dilapidated articles of dress she had on principle arrayed herself time out of mind on such occasions as the present; for this at once expressed a decent amount of veneration for the deceased and invited the next of kin to present her with a fresher suit of weeds, an appeal so frequently successful that the very fetch and ghost of Mrs. Gamp, bonnet and all, might be seen hanging up any hour of the day in at least a dozen of the second-hand clothes shops about Holborn.

The face of Mrs. Gamp, the nose in particular, was somewhat red and swollen, and it was difficult to enjoy her society without becoming conscious of a smell of spirits.

Like most persons who have obtained eminence in their profession, she took to hers very kindly; insomuch that, setting aside her natural predilections as a woman, she went to a lying-in or a laying-out with equal zest and relish.

I wish there were time for me to read Mr. Dickens' description of Mrs. Gamp in active duty in a sick room. Those of you who care to see this grotesque word picture of a bygone reality will find it, and also Mrs. Gamp's illuminating business conference with baldheaded Undertaken Mould, the oleaginous and complacent, who did "the thing pleasantly and in a great variety of styles," in chapter 25 of the first volume of "Life and Adventures of Martin Chuzzlewit."

Modern Nursing Service in Illinois.—You probably are aware of the devoted service of Elizabeth Frye, Florence Nightingale, Dorothy Dix, Clara Barton, "Mother" Bickerdike and others. It was their true spirit of nursing, their devotion, which humanized the art and formed the basis on which the modern system of trained nursing has been reared. You are well aware, of course, of the great changes for the better that have taken place in this institution under the enlightened superintendency of my friend, Dr. Hardt, but the same sort of medical and nursing service which has been installed here, has been put in force in all the state charitable institutions, notably in the insane group, since Governor Deneen assumed the executive office in Illinois. For your information I desire to present a brief statement of the improvement in the nursing and attendant service in our institutions in recent years, including the calendar year 1909:

Women as Nurses—Increased Service: The nursing and attendance service has been placed under the charge of women and the number of women nurses and attendants has been increased in a greater ratio than male employees by placing women on male wards to as great an extent as was practical. During the four years 1905-1909 the population of the eight institutions in the insane group (including Lincoln) increased 20.49 per cent., the attendance force increased 30.90 per cent., the female attendance force increased 48.23 per cent. and the male attendance force increased 12.18 per cent. In 1905 there was one female superin-

tendent of nurses; in 1909 there were seven, or an increase of 600 per cent. In 1905 there were no graduate nurses; in 1909 there were 43. If the 43 graduate nurses and the six additional chief nurses (superintendents of nurses) are included with the attendance force the percentage of increase of this combined force is 36.87 per cent., or 16.38 per cent. greater increase than the percentage of increase of the average population.

Wages Increased; Hours Lessened:—The wages of attendants have been increased. The average maximum monthly salary paid male attendants in 1905 was $35.75; in 1909 was $42.33, an increase in favor of 1909 of $6.68, or 18.68 per cent. increase. The maximum salary for women attendants in 1905 was $27.30; in 1909 was $33.50, an increase of $6.20 a month, or 22.70 per cent. increase. In addition to their salaries attendants are furnished board, room and laundry service free of charge. Bartonville has adopted the eight-hour system. Other institutions have begun a reduction of hours of duty according to the local possibilities. In 1905 there was one woman head nurse, who received $75 a month. In 1909 for the seven women head nurses the minimum salary was $60 and the maximum $75. There were no graduate nurses in the service in 1905. The 43 in the service in 1909 received a minimum of $40 and a maximum of $60 a month.

Lincoln Now Among Best.—It is a great pleasure for me to attend and take part in these graduating exercises and to see the evidences on every hand of an endeavor to give the unfortunates here quartered the best that the knowledge of to-day affords for them. I appreciate the changes, because I saw this place at its worst. Lincoln has been the football of politicians. It was the center of a recent investigation, colossal in its unfairness to the people responsible for the administration of this school and colony. But time has quickly obliterated the evil effects of that inquiry; and, if there are any enemies still defaming this school, the resolution adopted by the American Association for the Study of the Feeble Minded on the 18th of this month, when it honored Lincoln by meeting here, should silence the last of them, when the following paragraph is called to their attention:

Also, the Association wishes to hereby express its gratification over the marked improvement in the conditions characterizing the school for the feeble-minded during the administration of Dr. Hardt by which it has again risen to the ranks of the very best in this country. The transformation has been truly marvelous. All connected with the institution have been more than courteous; the children have demonstrated the excellent training that is being carried on, and the members of this Association are returning to their homes with new inspirations for their own work and feel satisfied that the attitude of the State Board of Administration is such that this standard will be maintained. This institution and the officials responsible for it and the state are to be congratulated upon the establishment here of a department of psychologic research, this being the first official recognition of this work in any state institution for the feeble-minded in this country.

The gentlemen who thus endorsed the service at Lincoln are the most competent critics in America of institutions for the feeble-minded. Dr. Hardt has reason to feel a justifiable pride in thus receiving from them a verbal pat on the back after the baptism of fire through which he and Lincoln passed so recently. But I am sure he realizes, as do those of us who reside in Springfield, that the great work accomplished here since the dark days two years ago could not have been accomplished without the encouragement of loyal hearts and the help of willing hands among

the employees. We are glad to acknowledge this help and to thank the loyal employees for it.

For the excellence of the particular branch of the modern service in evidence at these commencement exercises, the nursing service, the state owes its gratitude to Miss Maude Weaver, chief nurse, and to Dr. C. B. Caldwell, in particular, and to the whole medical and nursing force in general.

CONCLUSION.

You who are members of this graduating class are first fruits of the local training school. I desire to congratulate you upon the nursing accomplishments which these commencement exercises proclaim you to possess. I desire to congratulate the institution upon the results of its training school work. I wish you long and successful careers in one of the noblest of callings. But do not forget, no matter how trying your work may be at times, that the spirit of nursing (the mothering sense), as well as scientific knowledge, is necessary to a successful career in your chosen vocation.

SPLENECTOMY IN RELATION TO UNION IN FRACTURES.*

AN EXPERIMENTAL STUDY OF THE ADVISABILITY OF REMOVING A RUPTURED SPLEEN WHEN IT IS ASSOCIATED WITH A FRACTURE OF BONES.

ALLEN B. KANAVEL, M.D.
Assistant Professor of Surgery, Northwestern University Medical School.
CHICAGO, ILL.

The custom of removing the spleen when ruptured has suggested the question as to the advisability of this procedure when the injury is associated with a fracture of one or more bones, a complication that is not at all uncommon, owing to the fact that these patients are generally the subjects of an exceptionally severe injury, such as a fall from a great height. My interest in this question was heightened by noting such a complication ending in non-union among the cases reported from the clinic of Prof. Rehn, of Frankfurt.[1] There was neither callus formation nor union at the end of four months. The fracture was cut down upon and carefully united. Two months after this operation there was some slight callus formation, but the fracture still showed some abnormal mobility. The injection of iodin and of blood, after the method of Bier, availed nothing. After a year and a half, however, an enormous callus had formed and firm union was present.

As is well known, the bone marrow assumes the function of the spleen when the latter is lost, and this suggests a possible explanation of failure

---

* Read at a meeting of the Chicago Medical Society, April 27, 1910.

1. Ueber Milzexstirpation wegen Milzverletzung, W. Noetzel, Beit. z. Klin. Chir., Bd. 48, H. 11, 1906.

of union, since the changed function may delay repair. Our knowledge of bone repair is still hazy, and the exact part played by the various elements of the bone is still a moot question, in spite of the amount of work that has been done upon the subject. Wieder,[2] in an extensive study of the question, has modified many of the ideas that have come down to us from Dupuytren. A part of his conclusions which have a bearing upon this subject may be quoted:

In regeneration of bone, all the various elements, viz., periosteum, cortex, endosteum, and marrow, assist in the process. The medulla assists in the formation of osteoid trabeculæ by means of a skeleton framework along which the

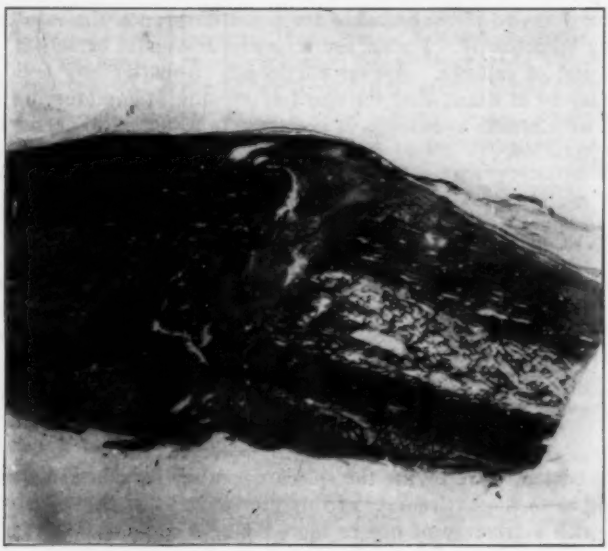

Fig. 1.—From splenectomized dog No. 15.

trabeculæ form and also, probably, by the activity of some of the marrow cells. Healthy medulla, when sutured between the apposed surfaces of the periosteum, hastens considerably the regeneration of bone.

With all of these suggestive facts before us, it seemed advisable to determine from an experimental standpoint whether, when this condition confronted us, it would be safe to resort to splenectomy, or whether it might be more advisable to attempt to save the spleen by one of the various methods of suture.

The work was begun some two years ago and was carried on in the Laboratory for Experimental Surgery at Northwestern University Medical School, and I wish to acknowledge the faithful assistance of various students there who have helped me, particularly Dr. W. L. McClure and Dr. G. W. Cornett.

Owing to various petty annoyances and difficulties well known to those who have to do with animal experimentation, the work of the first year had to be done over almost entirely the second year, but finally a complete series of splenectomized and control dogs was secured. The technique used was as follows: Dogs of approximately the same age and size were chosen. All dogs were anesthetized. In one series some such operation as gastroenterostomy was done, and two or three days following this one of the hind legs was broken, either by manual force or by counter pressure over the edge of the dog board. The dogs for this series were often those upon which some abdominal operation had been done in the student course.

In the second series the spleen was removed and the leg fractured on the same day. The legs were then covered by a plaster of Paris splint,

Fig. 2.—Splenectomized dog; 38 days. Note proliferation of both periosteum and endosteum.

which was removed from time to time. Some difficulty was met in the early cases, since the foot would become swollen below the cast and a pressure necrosis take place at the junction of the cast and the foot. This was finally obviated by covering the entire leg and foot, care being taken to bend the leg at a right angle, so that the cast would not come off.

The control and splenectomized dogs were killed at intervals of a few days, the legs removed and preserved. The fractured bone was sawed longitudinally and one-half decalcified by sulphuric acid. Sections were cut, and stained with eosin and hematoxylin.

At the time the dog was killed the amount of apparent union as shown by the mobility was noted, and classified as complete, firm, mod-

2. Regeneration of Bone, etc., by Henry S. Wieder, M.D., University of Pennsylvania, Med. Bull., September, 1907.

erately firm, slight union, and no union. The following cases were satisfactory in course and condition, and they were used for comparison, although by no means do they represent the full number of dogs operated upon:

SPLENECTOMIZED DOGS.

Dog Number.	Age of Fracture. Days.	Apparent Union.
2	51	Complete
6	42	Complete
3	35	Complete
12	29	Firm
19	26	Slight
9	24	Mod. Firm
17	20	No union
15	14	Slight union
23	10	No union
24	10	No union

CONTROL DOGS.

Dog Number.	Age of Fracture.	Apparent Union.
13	48	Complete
10	28	Complete
14	22	Firm
22	20	Firm
29	14	Mod. firm
21	7	No union

Although many interesting observations concerning bone repair in general might be made in a microscopic study of the specimens, that is not germane to this subject, and I shall confine myself to a general description of a few of the control and splenectomized specimens simply in a comparative sense. Neither shall I discuss the changes in the bone marrow which has already been done by other observers.

Dog 21. Control 7 days. Examination shows that blood extravasation is still present, and the fibrin between the ends is marked. The cartilage formation is well begun at the edges, considerable areas being present, but the exact origin is difficult to determine. The bone proper at the edges shows beginning adsorption. Osteoclasts are present in considerable numbers and much fibrin is seen. Trabeculation under the periosteum is well begun. The ends of the bones are not well approximated and there is some angulation.

Dog 25. Splentectomized 10 days. Fracture is near epiphyseal line. There has been no separation of the fragments. Extravasated blood between the fragments has not been absorbed. There is no evidence of cartilage formation or subperiosteal trabeculation. Slight subperiosteal absorption of bone by osteoclasts is evident,

Dog 15. Splenectomized 14 days. Fair apposition of the fragments. In one place a beginning development of cartilage is noted, hardly as much as in the seven-day control. No osteoporosis of cortex can be seen but connective tissue has begun to develop in the medulla. Subperiosteal trabeculation has begun but is not far advanced. Trabeculation is marked in the medulla.

Dog. 14. Control 22 days. Extensive subperiosteal cartilage development. Areas of cartilage have invaded the medulla apparently from endosteum but exact origin cannot be determined. Osteoporosis of medullary trabeculæ and periosteal trabeculæ previously formed is well advanced. Little cartilage development has

extended between the bone ends in the cortex but osteoporosis has begun. Connective tissue development between medullary ends well marked.

Dog 17. Splenectomized 20 days. Trabeculæ have formed under periosteum but very little cartilage formation is present. Very slight osteoporosis is noted. Very small amount of new connective tissue is found in the medulla. No change in ends of cortex bone and nothing between them.

Dog 10. Control 28 days. Extensive cartilage growth between ends of medulla but none between cortex ends. Medullary and periosteal osteoclasts many in number, few in cortex. Connective tissue and cartilage completely bridges medulla and periosteum.

Fig. 3.—Osteoclasts found in sections from Dog 15.

Dog 12. Splenectomized 29 days. Extensive subperiosteal trabeculation. Very few osteoclasts, osteoblasts plentiful. Little cartilage between medulla ends, but considerable connective tissue. Periosteal growth continues, but no continuity in medulla or in cortex.

Dog 3. Splenectomized 38 days. Although this dog died from unknown causes on the thirty-eighth day, it is a most valuable specimen from our standpoint. The dog was young. The medulla showed few trabeculæ, yet both the periosteal and endosteal trabeculæ were highly developed. The origin of each is clearly seen and the growth from the two sides has grown over and united with their respective opposite ends, clearly demonstrating the rôle of both the endosteum and the periosteum. Osteoporosis of the cortex ends has begun, but there are no trabeculæ or cartilage between the ends. A small amount of cartilage is present, but mostly in the periosteal region.

Dog 2. Splenectomized 52 days. Presents the processes of bone repair, both cartilaginous and osteoid, fully comparable with a 40-day control, and indeed there is a theoretical difference only between the 52-day splenectomized dog and a 48-day control.

The comparative study of this series shows that while repair is apparently delayed slightly, for practical purposes we cannot attribute ultimate non-union to the loss of the spleen. In the various specimens the individual elements vary considerably in the rate of repair. In one case we find the medulla throwing out its connective tissue frame-work and some of the other elements sluggish; and again, as in Dog 3, we find very little change in the medulla, yet here the periosteum and endosteum have gone on to a union of the respective trabecular growths. This specimen is a most beautiful demonstration of this method of repair. Again

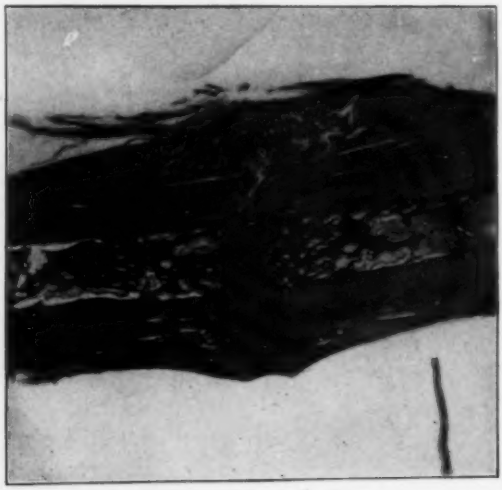

Fig. 4.—Dog 2. Splenectomized, 52 days.

in Dog 12 the medulla has been active, while the endosteum shows only slight change. The formation of cartilage also varies considerably, although in some it is most marked.

CONCLUSIONS.

The removal of the spleen when it is ruptured interferes slightly with the repair of any fracture, but not sufficiently to contraindicate its removal if the exigencies of the case demand it. On the other hand, if it can be sutured with safety to the patient it should be done.

Splenectomy results in impairing the regenerative power of bone in varying degrees in various elements, having in general a more marked effect upon the medulla, but in individual cases this apparently may be but slightly affected, while the other elements may be more seriously affected. In other words, the effect is probably the result of the general change in the system rather than any specific effect upon the bone.

FRACTURES OF THE MANDIBLE.*

THOMAS L. GILMER, M.D.
CHICAGO, ILL.

Fractures of the mandible are comparatively common, and differ from fractures of other bones mainly in that they are generally compound. When compound the exposure of the bone is usually within the mouth, thereby subjecting it to infection from the oral fluids, which not infrequently contain pyogenic bacteria. It is well known that the soft tissues of the mouth and the alveolar process when injured, resist the baneful influences of pus-forming organisms in a marked degree. Tooth extraction with considerable injury of the gums and alveolar process rarely results in infection, but when the body of the bone is broken and communication with the mouth is established, suppuration frequently occurs. This fact, together with the numerous muscular attachments of the mandible, render the treatment of lower jaw fractures especially difficult.

Prior to the better management of these fractures it was rare that any case recovered with perfect occlusion of the teeth of the mandible with those of the maxilla. Imperfection in occlusion left the patient with an impaired masticatory apparatus, seriously handicapping his physical well being, in addition to the establishment of a permanent disfigurement.

Fractures of the mandible may occur in any part of the bone, including the ramus and neck of the condyle, but are most frequently sustained in the region between the lateral incisor and first molar. Fractures of the angle rank second in frequency. They often accompany fractures in the body of the bone as a complication; indeed, if there is a multiple fracture of the mandible one of the breaks will generally be found at the angle. More than two simultaneous fractures of the mandible are rare. However, in my service at St. Luke's Hospital I had a patient with five breaks in the lower jaw, complicated by separation of the upper jaw from its bony attachments above and split in two in the median line throughout. In this case the lower jaw was broken on the left side at the angle and on a line with the first bicuspid. On the right side there was a fracture at the neck of the condyle, one at the angle, another at the cuspid tooth. The nasal bones were also broken. The face was literally a bag of broken bones. This complicated injury was due to a fall from an open window on the second floor of a building, to the pavement below.

DIAGNOSIS.

Diagnosis of fractures of the body of the mandible is not usually difficult. Mobility and crepitation by manipulation may easily be made out, and displacement is the rule. Except in edentulous jaws the teeth generally indicate fracture, by being out of alignment, with abnormal occlusion of the lower with the upper teeth. Fracture at the angle or of the ramus is diagnosed by mobility, malocclusion or the skiagraph.

* Read at a meeting of the Chicago Medical Society, April 27, 1910.

However, neither malocclusion or displacement is the rule. Occasionally in a unilateral temporo-mandibular luxation a differential diagnosis is necessary to determine whether there be a fracture of the neck of the condyle or a dislocation, since in either case there will be malocclusion of the teeth. This is not difficult since in dislocation, the condyle will be out of the glenoid fossa, therefore a deep depression with a concave upper surface will be felt in front of the tragus of the ear, while in fracture of the neck, the head of the bone will occupy its normal place and there will be no depression.

Displacement.—Displacement is caused primarily by the force which caused the accident and secondarily by muscular traction.

There are eleven pairs of muscles attached to the mandible and each one of these in the performance of its functions may, if the line of fracture be favorable, produce displacement of fragments. Those most active in causing displacement are the masseter, internal pterygoid, mylohyoid and temporal. If the break is in the vicinity of the cuspids or biscuspids, and the line of fracture be such that the short fragment does not impinge on the longer fragment, the distal fragment will be drawn lingually by the mylohyoid and the internal pterygoid and elevated by the masseter and temporal.

If the jaw is broken in two places, one on each side, in the bicuspid region, the mental fragment is depressed by the muscles attached to the genial tubercles, while the posterior fragments are elevated by the masseter and internal pterygoid muscles, causing such displacement. Such a fracture is difficult to manage by the older methods of treatment.

Fracture of the angle is not usually accompanied by any marked displacement and may be overlooked, especially in corpulent patients, unless a more than casual examination is made. Fracture between the second and third molars may also be overlooked, even though there be malocclusion between the upper and lower teeth caused by impingment of the third molar against an upper tooth by muscular elevation of the posterior fragment. In such fractures it is not uncommon for the patient to be unaware of the nature of the injury, attributing the malocclusion to a supposed injury of the posterior teeth. The surgeon may be similarly impressed. However, a careful examination discovers the presence of a fracture. A number of such cases have presented at my clinic. Whenever there has been an injury about the jaws careful search should always be made for fracture of the mandible, since in some cases in which the periosteum has been but slightly injured the only symptom observed by the patient is inability to masticate without pain or inconvenience. The loss of this function is frequently attributed by the patient to a supposed injury of the teeth, therefore he does not call attention to the jaw. Other injuries more painful or of greater concern cause the surgeon to concentrate his attention in their direction. If fracture is suspected, say in the left ramus, its presence may be determined by the following method. Place the fingers of the left hand over the posterior portion of this part of the bone, including the angle, with the thumb on

the anterior portion. Place the fingers of the right hand under the base of the body of the bone and the thumb of this hand on the molar or bicuspid teeth. If force is now exerted, mobility will be discovered if fracture is *present*.

TREATMENT.

The treatment of fractures of the mandible, if there is considerable displacement, offers difficulties quite equal to similar injuries of other bones. The surgeon is handicapped in his treatment of most jaw fractures, because no easy universal method of splinting or bandaging is applicable for immobilization. In cases where there is little or no displacement simple appliances, such as the four-tailed bandage, are quite sufficient; indeed in a few fractures in which there is little or no laceration of the periosteum, there will be no displacement and no appliance is necessary, provided the patient is careful to abstain from use of the jaw in mastication.

Dental science has added much to surgical technique in treatment of fractures of the jaws. Oral splinting was first suggested through this source. Owing to the nature of the conditions in mandible fractures external splinting is not practicable, and oral splints, if employed, must be made for each patient, since the shape and size of the teeth differ in each case, and the splints are of necessity attached to these organs.

Splints.—Many forms of oral splints have been employed, most of them complicated, unhygienic and difficult of construction. It is needless to say that the less complicated the staying appliance if effective the better. The older forms of splints were of the kind known as interdental splints. What is meant by an interdental splint is an appliance made to cover the teeth of both the upper and lower jaws. Such splints should never be employed. In addition to the fact that they are unhygienic and difficult to construct they separate the jaws when applied. Therefore there is danger that they may cause distortion, preventing nice adjustment of the ends of the fragments. They are absolutely contraindicated in fractures posterior to the second molar, as the opening of the jaws tends to separate the upper margins of the fragments, leaving a V-shaped space with the lower border of the bone only in contact. If union takes place under such circumstances the teeth will not occlude. If splinting is resorted to I am of the opinion that but two forms of splints are permissible; viz, one composed of vulcanite or metal to cover the lower teeth, with but a thin layer of material over their occlusal surface, and this surface so formed to permit a correct occlusion with the upper teeth. This splint is secured to the teeth by cement. It completely immobilizes the fragments, allows free use of the jaw and permits mastication of soft food. This splint is known as the Heath splint.

The other splint referred to is the author's splint. It is made of vulcanite and so constructed that it is accurately adapted to the lingual surfaces of the teeth. It is secured to the teeth by wires, holes being drilled in the splint to receive them. This splint is not cumbersome; it

permits, if well secured, free movement of the jaw, and the occlusion of the teeth may at all times be observed. No form of oral splinting is applicable if the line of break is posterior to the second molar, since there must be two or more solidly set teeth in each fragment of bone to support the splint; one tooth only is not sufficient.

All oral splints are formed on plaster casts of the teeth. If the teeth are out of alignment, the casts must be reconstructed. This is accomplished by cutting the cast of the mandible in two on a line with the break or breaks, as the case may be, and accurately occluding the teeth of these parts with a cast of the teeth secured of the maxilla. The two or more parts of the mandible cast are now joined by the application of soft plaster. The result is a perfect restoration of the alignment of the teeth of the fractured lower jaw, upon which any form of splint decided upon may be constructed.

Wiring.—If the break be posterior to the second molar, including the angle or any portion of the ramus, a better method than splinting is to wire the teeth of the mandible to those of the maxilla. This simple method was introduced by me in 1882. It is a method which may be employed by any surgeon, independent of the dentist. German silver, phosphor bronze or soft iron wire may be used. Silver is too soft and too ductile. Wires are passed around the necks of several teeth on each side of the mandible. The two ends of each wire are twisted so that it fits the tooth tightly. A similar number of wires are placed on corresponding upper teeth. The teeth of the mandible are now accurately occluded with those of the maxilla and the wires of the lower teeth secured to those of the upper by twisting. This holds the fragments of the lower jaw in correct apposition and secures perfect occlusion of the teeth. I know of no method better adapted for the treatment of most cases of mandible fractures than this if a sufficient number of firmly set teeth remain in the jaws. Objections may be urged against this method. 1. The danger to the patient in case of emesis. 2. The supposed difficulty of the patient's taking nourishment, and 3, the inability to cleanse the lingual surfaces of the teeth. If the teeth are not wired until the stomach is freed from solid food, the danger from vomiting is slight. I have never seen a case in which there was not sufficient room, from the loss of a tooth or from space between the upper and lower teeth, to permit the patient being fed on liquid food. It is true that with this treatment, the lingual surfaces of the teeth cannot be brushed, but these surfaces are never cleansed by many and but indifferently by the average individual.

Wiring through the Bone.—Owing to infection or to osteogenetic inactivity, from one cause or another, nonunion may result. In that case wiring through the bone may be desirable, not only for the purpose of immobilization, but to stimulate the bone to greater activity for repair. This treatment may also be necessary in edentulous cases, or when no one method will suffice, as in multiple fracture, in conjunction with splinting or wiring of the teeth.

Bandages.—Bandages, as a rule, unless there is no tendency to displacement, are insufficient. The tendency of bandages in most cases, if sufficiently tightly applied to be effective, is to displace the fragments. No boot or outside splint supported by bandage, can be so well adapted to the contour of the jaw as to immobilize the fragments, if the line of break be such as to permit them to slide upon each other. Plaster of Paris bandages are not much more efficient than the ordinary bandage. The four-tailed bandage affords a good temporary support for the jaw until a better method may be constructed.

HYDROTHERAPY IN ACUTE DISEASES.*

SIMON BARUCH, M.D.
NEW YORK.

Two therapeutic maxims, hoary with the age of centuries, but vital with imperishable truth, are my guides in the management of acute diseases. Hippocrates taught twenty-three centuries ago "Nature Heals." The neglect of this grand therapeutic truth has filled more graves than all the battles of history, and its tardy recognition during the past half century has saved more lives in acute diseases than all the drugs in the materia medica. Another maxim of this wisest physician of all time has received experimental and clinical confirmation in recent times, but has not been so generally accepted.

Hippocrates taught also, that "Cold water warms," implying that it is not an antipyretic or sedative but a stimulant. Neglect of this truth has permitted thousands to die; its general recognition for which I have been striving for a quarter of a century would add vastly to our therapeutic resources for strengthening the defenses of the body against the pathogenic organisms which render many acute diseases fatal. With the single exception of malarial fevers, more acute diseases may be carried to a successful issue by the judicious application of water than by all known drugs.

There are several obstacles to the general acceptance of hydrotherapy in acute diseases. First, confusion in technique; second, the antithermic conception of cold baths; third, fear of the so-called shock. Rise of temperature being the chief manifestation in acute diseases, cold baths have appealed to the medical mind as the most obvious mode of reducing it. Their rise and fall in the estimation of physicians may be clearly traced to their being used rationally or empirically. Although the most reliable and largest statistics testify to their pre-eminent value I would not plead for your acceptance of hydrotherapy in acute diseases on these empirical grounds alone. This would be an insult to your intelligence and contrary to my method of presenting the subject. Unfortunately, however, this is the basis upon which nearly every author presents the application of water in acute diseases. Cold baths are almost invariably

* Read by invitation before the Chicago Medical Society, June 1, 1910.

classed among remedies for pyrexia in the text-books and their modus operandi is very rarely mentioned. The result is an absolute misunderstanding of their true action, frequent failure to obtain their legitimate effects and their consequent abandonment.

These difficulties can be removed by teaching in our schools the rationale of their action in health and disease, and by insisting upon the clinical truth that only by exact technique and careful watching of the indications and of the reaction may exact results be obtained. Little progress will be made until such terms as cool water, cold water, warm water, hot water are avoided in prescriptions and in their stead are stated the exact temperature and precise technique. Water should be designated as cold or warm when it is below or above the temperature of the covered skin, which in a normal subject is about 92 degrees Fahrenheit, and in fever subjects higher. My reason for adopting this rule lies in the hydrotherapeutic law that the *shock from cold water and the subsequent reaction, which is its object, are in proportion to the difference between the temperature of the skin and that of the water used.* When water having a temperature in the neighborhood of 92 degrees Fahrenheit is applied to the skin its effect is neutral, because the thermic irritation is absent. Guided by physiologic and therapeutic considerations I have established a neutral zone—between 90 and 100 degrees Fahrenheit. Water below this zone evokes refreshing or stimulating effects; water above this zone produces sedative or relaxing effects. When the body is immersed in water at a temperature ten degrees below the neutral zone as is done in some acute diseases, a positive irritation of the sensory terminals ensues; a still lower temperature produces greater thermic excitation and in addition an emptying of cutaneous vessels. The lower the temperature of the water is than that of the skin, of course, the greater the sensory excitation. This, then, is one mode of dosage of water applied externally. Another mode of dosage is by changing the duration of the treatment. We know empirically that if water, say 15 degrees or more below the temperature of the skin be applied to the latter briefly, reaction follows quickly and that the effect is stimulating, as is familiarly noted in sprinkling the face of a fainting person.

It does not appear to be so generally known, however, at least the fact appears to be too often disregarded, that the same temperature of water applied to the same person upon a larger surface, as in the bath tub, would cause depression to ensue if its duration were unduly prolonged.

What is the object of applying water below the temperature of the skin in fevers? The chief aim is to produce a reaction which may inure to the invigoration and refreshment of the organism and thus enhance its capacity to resist the depreciating lethal toxins circulating in the blood. Inasmuch as the intensity, duration and efficacy of this reaction are in proportion to the so-called shock produced by the cold procedures, it is meet that we discuss the rationale of this process, in order that a working rule for adapting them to varying conditions may be formulated. Like all peripheral excitations that of cold applied through the medium of water is conveyed upon sensory tracts to the central nervous system

and returned upon motor tracts to various parts of the organism. This is a trite physiologic fact. The constringing action of cold is also well known but the rationale of its potent influence upon the circulation, when *applied through the medium of water* is not so well understood as it deserves to be. Permit me, therefore, to briefly review this important subject. For purposes of more clear elucidation I recognize two phases of reaction after cold procedures, namely, a neural and a vascular reaction.

1. A manifestation of the neural phase is observed in the familiar process of sprinkling the still-born infant with cold water. We are taught that the local excitation of the sensory cutaneous terminals is conveyed to the central nervous system and reflected through the vagus and other nerves to the inspiratory muscles. This interesting process illustrates the absurdity of regarding shock from cold water as "a depression of the vital powers"—a superficial view which has often forbidden its application in disease. Rather should this shock be regarded under another definition, "an unpleasant surprise." *Cold water evokes a shock which surprises the sensory terminals in the skin and thus acts as a veritable stimulant to the central nervous system.*

2. The vascular reaction is familiar in its simplest form in the application of cold to a frost-bitten part. Here, too, cold acts as a stimulant, arousing the congested and paretic vessels to vigorous action, and restoring normal circulation.

In the application of cold water in acute diseases a combination of the neural and vascular reaction is utilized. Their rationale is proportionately the same in the mildest procedure like an ablution, as in the more intensely acting tub bath; hence *it presents an absolutely scientific basis* for our prescription of hydrotherapy in acute diseases. As an example, let us see what is the modus operandi of a full bath at 70 degrees Fahrenheit? It is well known that sudden immersion of a fever patient into water at this temperature evokes a so-called shock.

This is as I have said, a surprise to the sensory terminals: nothing more if applied judiciously, a *vast* deal and *sadly* more when it is applied as recommended in many text-books in the form of ice water baths, or ice-packs for hyperpyrexia. Such procedures are indeed capable of producing a shock which depresses the "vital powers," but such irrational use of water is a no more reasonable objection to the cold bath than would injudicious use of morphia to deep narcotism be an argument against the judicious application of this valuable drug. Intelligently applied thermic stimulation of the peripheral sensory terminals by cold arouses the higher centers of the entire nervous apparatus into activity.

What are the practical therapeutic effects of this so-called shock? First and foremost, refreshment, invigoration of that part of the organism which is most essential to the functionating capacity of all the life sustaining organs and which in infectious fevers especially receives the chief brunt of the attack. The latter is evident in typhoid fever, for example, in the dull headache, apathy and general adynamia which characterize the first stages and which finds more pronounced expression in

muttering delirium, coma-vigil and other manifestations in the later stages. As the parched flower wilting under arid summer heat is refreshed by a cooling shower, so is the fevered patient restored by a properly administered cold friction bath. The eye brightens, the countenance loses its apathy, the intellect clears, the entire aspect of the case is changed, temporarily it is true, but the favorable change may be maintained by judicious repetition until the danger is past. As Musser and Wilson, of the Philadelphia schools; Osler and Barker, of Johns Hopkins University, and others have said: "Typhoid fever presents an entirely different picture." This is the effect of the nerve reaction after cold procedures.

The vascular reaction after a bath of 70 degrees F., though less pronounced after milder procedures, is of equal significance and import and is more enduring. What is the rationale of this interesting process? Formerly I taught that the action of water below the temperature of the nude skin produced contraction of the cutaneous vessels, driving the blood from the surface, and upon withdrawal of the cold the cutaneous vessels dilated, producing a tonic hyperemia. This rationale, first suggested by Winternitz, the father of modern Hydrotherapy, was controverted by Mathes, of Jena, now in Koeln, who held correctly that when the muscular walls of a vessel are stretched beyond their normal calibre they are in an atonic condition and that therefore the reaction after cold procedures could not be tonic. Led to investigate this apparent contradiction between the clinically correct view of Winternitz and the physiologically correct view of Mathes, I discovered that both based their deductions on the false premise that the cutaneous vessels which are contracted by a cold bath are provided with contractile muscular walls. The fact is that by far the larger vascular area in the skin consists of capillaries, that these are mere endothelial tubes filling the papillary spaces in enormous tortuous reduplication and that the arterioles which are located in the sub-cutaneous tissue lie probably out of reach of any but the most intense cold procedures, which are not followed by good reaction. Cyanosis of the skin under an icebag, and cutaneous pallor in an intensely cold bath illustrate my meaning.

The skin is permeated by unstripped muscular fibres interwoven with white and yellow elastic tissue, varying in quantity between the superabundance in the scrotum and entire absence in the palmar and plantar surfaces. This anatomical peculiarity of the skin endows it with a function hitherto not recognized, as I shall presently show. These muscular fibres, called by Unna, who has probably given us the clearest idea of the minute anatomy of the skin, oblique tensors of the cutis, contract diagonally through the thickness of the skin just as do the arrectores pilorum, which are more familiar to us. Tomsa has shown that "when the arrectores contract, causing cutis anserina, they draw the skin from without inward, embracing in their action the terminal portion of the blood supply of the papillary body, and thus emptying the smallest blood vessels in such manner as may best conduce to normal circulation." Unna also insists that "the action of the arrectores muscles is not con-

fined to the hair follicles, but that they are intimately involved in the movement of the blood and lymph." Guided by the minute anatomy and physiology of the muscular structures of the skin, which these investigators have developed and others have confirmed, I hold that these structures replace the muscular and elastic coats which are absent in the papillary vessels, and that by their contraction under cold, large masses of blood are driven or squeezed out of them. Differing from arterioles, the papillary vessels are not *surrounded* by muscular fibres which would dilate under the vis a tergo of increased cardiac action following contraction induced by cold. On the contrary these vessels are subject only to *compression* by the muscular structures of the skin when the latter are constringed by cold water. It follows that there is not an atonic giving way of muscular coats as would ensue in arteries but a *restitution of the normal elasticity of the skin muscles* when their contraction gives way under the inflow of warm blood driven abundantly into the papillary vessels under the enhanced vasomotor activity aroused by the impact of cold. There is no possibility of stretching these muscular structures beyond their normal limit and thus producing a condition that would involve relaxation or atony, since they are firm and do not envelop or surround the vessels. When the height of reaction is reached and the papillary vessels are filled to repletion by the enhanced cardiac impulse, these muscular fibres stand like a wall, limiting the farther dilatation of the vessels; they increase vasomotor activity in all parts of the body by increasing the resistance at the periphery throughout the enormous vascular area of the skin. The experiments of Bier and Ritter have thrown light upon a hitherto not easily explicable phenomenon, viz., the bright red hue of the skin after correct application of cold water. Ritter called attention to the fact that when the skin vessels are so intensely contracted by freezing with ethyl chlorid that it is blanched, the return blood is of arterial ruddy color, even when the arm experimented on has been made cyanotic by constriction with a rubber bandage. I have demonstrated this remarkable phenomenon to my classes. All anatomical and physiologic facts point to the correctness of this view of tonic reaction after cold baths and they all explain the atonic reaction after warm procedures.

The contracted muscles of the skin drive the blood from the surface, which becomes pallid, there may be shivering, which indicates that the temperature is dangerously below the patient's reactive capacity. The barrier presented by the enhanced tonicity of the skin to the onflow of blood into the papillary vessels, together with the excitation of the vasomotor center, evoke an increased cardiac impulse. The temporal pulse becomes more full, increases in tension and diminishes in frequency; it loses compressibility and dicrotism, if present. Friction with a coarse sponge stimulates the contracted cutaneous muscle fibres, inducing release of contraction; it prevents collapse and shock, which may follow the contraction of the deeper seated vessels under prolonged immersion.

Therapeutically the nerve reaction differs from the vascular reaction. While nerve reaction may be easily aroused in mild types by moderate water procedures as sprinkling or sponging and even in severe toxic conditions very brief applications, like affusions of fifty degrees, may restore consciousness, such effects are evanescent and require frequent repetition. To render hydrotherapeutic procedures effective and enduring, procedures of some duration are demanded and these are especially urgent when the vascular reaction is to be aroused. For this purpose immersion of the entire body produces the best results, as is evident from the rationale.

In typhoid and other infectious fevers, not only is the ganglionic supply of the muscular cutaneous apparatus poisoned more or less, but the vasomotor system is depreciated; the blood flows sluggishly through the peripheral vessels. Stimulation of the heart's vis a tergo by alcohol or digitalis is like spurring a jaded horse: the heart is tired out, the entire arterial system lacks the necessary vigor to overcome the semiparetic condition at the periphery. As Hobart Hare has so well said, the heart may be compared under these conditions to a locomotive upon a slippery track, an increased supply of steam causes the wheels to revolve more rapidly without progression; the engineer sands the track, the resistance thus produced may be likened to the contraction of the vessels, compression, I would term it, in the cutaneous periphery, which aids the crippled vasomotor system and removes circulatory depreciation. It is to be remembered that the peripheral vessels in all the organs also suffer from this depreciation. As a result we have in mild cases shallow and rapid respiration, with imperfect interchange of gases manifesting itself in severe cases by cyanosis and later by hypostatic pneumonia which kills. The depreciation of the peripheral vessels in the kidneys produces diminution in quantity and toxicity of the urine with death from imperfect elimination. The depreciation of the peripheral circulation in and around Peyer's patches leads to increased ulceration, hence hemorrhage, perforation and death. The same condition in the stomach and upper intestine causes inactivity of the glandular supply, manifested by the dry tongue and abdominal distention which preclude nutrition and also lead to a fatal issue.

How remarkably all these death dealing complications or rather ultimate sequences of infectious fevers are forestalled by judiciously applied hydrotherapy, those who have the courage of conviction testify in all countries. The statistics of the aged but still earnest Dr. Vogl, formerly Surgeon-General of the Bavarian Army, from whom I received a monograph on this subject only a few weeks ago, prove it conclusively, as do the writings of Glenard, who is better known in this country as the discoverer of enteroptosis and who as a prisoner of war in Stettin learned to appreciate the Brand bath and became its ardent propagandist in Lyons and Paris. This prophylactic action upon the lethal factors in typhoid fevers is also confirmed by Hare, of Australia, and by many other clinicians in all parts of the world.

The inhibitory effects of the strict cold friction bath upon the lethal factors in typhoid fever cannot be too urgently emphasized, *for herein lies its superiority over milder baths.* Disregard of this essential point, established by large and reliable statistics, has resulted in missing the chief essentials of the cold bath and consequently in needless loss of life. In Germany, for instance, the *methodical cold bath first demonstrated by Ernst Brand, of Stettin,* as having enormously reduced the mortality of typhoid fever, has fallen into desuetude because the real aim and striving of this earnest man have been strangely misunderstood in his own country. Lest I be charged with injustice to our learned colleagues in that country, I offer the statement of the eminent teacher, Curschman, which is copied from Nothnagel's Cyclopedia, translated by Stengel and edited by Osler (pages 455 and 458):

At first under the profound influence of the labors of Brand and his successors and in consequence of the overestimation of the significance of febrile elevation of temperature, cold baths were preferably given at temperatures as low as 5 to 10 degrees C. (44 to 50 degrees F.), etc.

From personal correspondence with this lamented but misunderstood benefactor of suffering humanity I know that he never advised such low temperature and that this statement of his views and practice is absolutely incorrect. I hope it is a misprint because it does not seem possible that so learned a man could express such an opinion. Common sense would lead one to seriously doubt that any conscious human being would permit himself to be immersed for fifteen minutes in water 6 degrees C. (44 degrees F.) That such misconception of Brand's views and practice by the leading clinical teachers in Germany has neutralized all the labors of Brand and the wonderful statistics (the like of which has never been in therapeutics) of the earnest, patriotic and sympathetic Vogl, of Munich, is but an evidence of the blind following of authority which has cost so many lives in the dreary past and a repetition of which in this enlightened day seemed impossible. Far be it from me to speak of the renowned Curschman in captious criticism, especially as I am indebted to him for courtesies during a visit to his clinic in 1909, and I admired the excellent practical instruction in hydrotherapy which is given by Dr. Steinert, his chief of clinic. I stand on the record in defense of Ernst Brand who at the time when Liebermeister and other excellent clinicians were teaching that the cold bath was chiefly effective as an antipyretic, dared to insist that it is the chief function of the cold friction bath to arouse the central nervous system and to sustain the heart. It is the sad irony of history that the highest authority on typhoid fever should misconstrue and unwittingly misrepresent the teachings for which Brand fought so valiently and the success of which he proved to the satisfaction of the highest authorities.

In 1887 Guttstadt, who presided over the Imperial Statistical Bureau, stated in *Verein fur Innere Medicin* in Berlin "An important factor in the diminution of mortality is the more successful treatment now used, especially Brand's method." Professor Gerhardt opened his course of lectures in the Berlin Uni-

versity in 1896 on the Prognosis of Disease, stating that "Prognosis of Typhoid Fever has been changed, the mortality has been reduced by the Brand bath to one-fourth."

What is the status of this method to-day in Germany?

In a Symposium published by *Die Deutsche Klinik* in 1908 the Brand bath is barely mentioned. One practitioner stated that during the Franco-Prussian war its results were so marvelous and the aspect of the cases was so completely changed by it that the medical inspectors doubted the diagnosis until convinced by the records, but that he has abandoned it in private practice because it is too heroic!

In the absence of German statistics of the Brand method in civil hospitals, I offer a comparison of statistics from American and Australian civil hospitals with the statistics of Curschman's own hospital. This is the only crucial test, and the numbers are large enough to make the comparison fair. In the *"Statistik der im Krankenhaus St. Jacob in Leipzig in den Jahren* 1893 *bis* 1907 *behandelten Faelle von Typhus Abdominalis*—Inaugural Dissertation von Karl Pierkowski 1907, page 11," it is stated that "there died among 1,229 patients 231, the total mortality being therefore 18.8 per cent."

On the other hand we find in W. Gilman Thompson's *Practice of Medicine* the record of 900 cases treated according to Brand in the Presbyterian and New York Hospitals, with a mortality of 7.76 per cent—and in 368 cases reported by W. Hanna Thomson from the Roosevelt Hospital, a mortality of 6.8, and in 1,902 cases reported by Hare from the Brisbane Hospital, Melbourne, a mortality of 7.05.

The condemnation of the Brand bath is proved unjust by the only crucial test—the bedside.

The technique as I obtained it from Brand himself is as follows. When the axillary temperature taken for ten minutes with a closely held thermometer registers 39.5°C (103°F.,) (the rectal temperature is more reliable and I use lately 103°F. as a guide) the patient is lifted into a tub two-thirds full of water not below 18°C. (64.4°F.) nor above 20°C. (70°F.) in which he is rubbed gently for fifteen minutes. During the intervals a compress of three folds of old linen wrung out of water at 60°F. and covered with thin flannel is placed over the abdomen and held firmly in place by a thin flannel band covering it completely. This is renewed every hour if warm. The bath is repeated every four hours when the rectal temperature is 103° or over.

I would not criticize those who see fit to deviate this technique. Each physician must use his own judgment, but I do emphatically deny the fairness of judging the Brand method by any other standard than this technique and I demand in justice to the deceased author of this great life saving procedure, that statistics be given to prove the fallacy of his deductions. Such statistics have not yet come within my observation. Ex cathedra statements without bedside proof do not justify the abandonment of a measure which has been demonstrated as valuable in a record of cases of patients of the same age, sex and occupation, under the same environment during a period of forty-three years; a veritable therapeutic control experiment the like of which is not found in medicine.

Nor are the simple assertions of the most conscientious colleague to be accepted in opposition to the unprejudiced statistical evidence of Loomis and Thompson, giving a reduction of 50 per cent. in the New York Hospitals, and of my own personal and collated statistics (The Principles and Practice of Medicine, third edition, page 202) which show a mortality of 20.76 per cent. for the expectant treatment (125,330 cases) and 4.26 per cent. for the Brand bath (7,426 cases).

To those who avoid this method because it is too heroic I would say: If a life may be saved by amputating a limb would you hesitate to adopt this thousandfold more heroic procedure? Is the physician true to his sacred trust if he abandons the life-saving cold friction bath because it distresses the patient and his family? Escaping this responsibility may be as fatal to the patient as it is pusillanimous in the doctor. My course, when objection is made is to enlighten the objectors on the difference in the chances of recovery. Though I have never failed to overrule the most imperative opposition, I can well conceive the unavoidability of escape from this dilemma. In that event the nearest possible substitute to the Brand bath may be safely adopted. The physician must never forget, however, that mildness of the early stage does not guarantee the later absence of lethal complications and that these may be prevented by correct bathing.

Ablutions with a large sponge beginning with water at 70 F. reduced each time until 60 degrees are reached and accompanied by good friction, repeated every two or three hours, offer a good substitute. The friction sheet bath, fully described in my book, approaches the strict cold friction bath very nearly. It is not the cold wet pack commonly used in hospitals for temperature reduction, but a far more perfect procedure for refreshing, calming and strengthening the patient. The friction sheet bath may be repeated every three hours. To abandon the Brand bath on account of cyanosis, extreme chilling during and prolonged shivering after the bath, is imperative. When these manifestations cannot be prevented the addition of CO^2 (with the Zeo bath or Cassebeer, a Triton preparation) often produces the most striking effects on the reactive capacity of the patient and enables one to continue the bath of low temperature. When this cannot be done, I advise shortening of the bath which promotes better reaction. To shorten the duration of the bath is far better than raising its temperature; the more intense the thermic excitation the better the reactive stimulation. When the latter has been reestablished, the bath may be safely and cautiously prolonged to fifteen minutes.

My procedure is as follows: When a rectal temperature of 103 F. or over without definite diagnosis is present, the patient is placed in a small rocking chair wrapped in a blanket and linen or soft cotton sheet, slid into the bath room, undressed and bathed with friction in water at 90°F. for ten minutes. He is dried with the sheet, put to bed and his temperature is taken in half an hour. Three and a half hours later if his temperature has not fallen, he is again bathed with friction in water at 85°F. The bath is repeated every four hours (or later if temperature in rectum indicates) in water five degrees lower each time until 70° F. are reached. If one of these baths has reduced the rectal temperature (not the mouth or axilla temperature) two degrees or more, the diagnosis of

typhoid fever may be doubted; the larger the reduction of temperature in this early stage the more negative is the diagnosis, the smaller the reduction the more positive it is. When the diagnosis is established the friction bath at 70°F. is continued every four hours during the entire case. In most acute diseases a compress at 60°F. is placed on the abdomen and renewed every hour and at least two ounces of water at 40°F. are administered (and to be noted on the record) every two hours. The patient is not disturbed if he is sleeping normally.

In pneumonia I have discontinued the tub bath except in children in whom pleurisy is often absent. A chest compress of 60°F. is applied so as to cover the entire chest and stimulate the scapular, epigastric and abdominal reflex areas, described by the physiologists as connected with the third to the seventh dorsal ganglia which are said to control the pulmonary circulation. This is renewed every hour when reaction is assured by the warming of the wet linen. Here too I have noted an enormous increase of the quantity and toxicity of urine under the regular administration of small quantities of ice water. In the broncho-pneumonia of children, idiopathic or as complication, the graduated friction bath of 90 to 80 may be added to the compresses with often positive advantage. In scarlatina and measles the stage of the disease governs my hydrotherapy. In the prodromic stage when cyanosis indicates intense toxemia a bath of 105 or more for two minutes arouses the central nervous system, produces a cutaneous hyperemia which must not, however, be permitted to become atonic and dangerous because blood pressure is reduced by its prolongation. If the eruption does not show improved circulation, the little patient may receive one or more basins of water at 50° or 60°F. over the shoulders before removal from the hot dip. This treatment will surprise those who have seen these desperate cases succumb to eclamptic attacks in the eruptive fevers and in broncho-pneumonia.

In the ordinary forms of the exanthemata two or more baths a day of 100° reduced to 90°F. or less are useful, refreshing the patient, producing sleep and preventing complications. In hyperpyrexia the prolonged bath, one hour or longer at 100° or less but not below the neutral zone, 90°F., accomplishes remarkable results. If delirium or other manifestations of nerve depreciation be present, the continuous bath may be terminated with the affusions already referred to. A hammock constructed of a sheet secured by wet clothes-pins as described in my book, makes the patient more comfortable than he would be lying on the bottom of the tub.

In conclusion I would plead for closer study and more thorough teaching in our schools of the physiologic and therapeutic action of water. I would advise the practitioner to seek information only in works written by men who have had bedside experience in acute diseases, and who furnish the rationale of hydrotherapy in these cases, with precise directions of the technique, temperature, duration and frequency of repetition. Until you have done this I urge on you to avoid hydrotherapy altogether, for it is a double-edged sword for patient and physician alike.

135 W. Seventy-third Street.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF THE ILLINOIS STATE MEDICAL SOCIETY

GENERAL OFFICERS 1910-11

PRESIDENT - - - - - ALFRED C. COTTON, CHICAGO
PRESIDENT-ELECT - - - - W. K. NEWCOMB, CHAMPAIGN
FIRST VICE-PRESIDENT - J. W. HAMILTON, MT. VERNON
SECOND VICE-PRESIDENT - JAMES E. STUBBS, CHICAGO
SECRETARY - - - - - EDMUND W. WEIS, OTTAWA
TREASURER - - - - EVERETT J. BROWN, DECATUR
(Ex-officio Clerk of the Council.)
EDITOR - - - - GEORGE N. KREIDER, SPRINGFIELD
522 Capitol Avenue.
ASSISTANT EDITOR - GEORGE EDWIN BAXTER, CHICAGO
4603 Evanston Avenue.

THE COUNCIL

CARL E. BLACK, JACKSONVILLE. J. WHITEFIELD SMITH, BLOOMINGTON.
H. C. MITCHELL, CARBONDALE. J. Q. ROANE, CARLYLE.
M. L. HARRIS, CHICAGO. J. W. PETTIT, OTTAWA.
J. F. PERCY, GALESBURG. J. H. STEALY, FREEPORT.
W. K. NEWCOMB, CHAMPAIGN.

AUGUST, 1910.

SHOULD THE PRESIDENT OF THE STATE SOCIETY BE A PERMANENT, SALARIED OFFICER?

EX-PRESIDENT WIGGINS' SUGGESTIONS.

In our society columns will be found an interesting communication from the St. Clair County Medical Society, being a report of the meeting of this society on July 7, when it was addressed by ex-President J. L. Wiggins. Dr. Wiggins, after having spent a year in the active service in the society, now comes forward with the suggestion that the affairs of the state could only be properly attended to when all the principal officers are made permanent, and paid for the time and attention they give to the duties of the office. After the president's address the matter was seriously considered by the society, and Dr. Fairbrother, an old, valued and conservative member of the society, offered resolutions to the effect that the office of the president of the State Society, be a salaried office and be held for a term of four years. The motion was unanimously adopted.

This very important communication should be considered by every reader, and the subject brought to the attention of the various county societies, before the annual meeting of 1911.

THE GOVERNORS AND MEDICAL MEN.

In our hearing a certain chief executive of one of the leading states of the Union volunteered a statement that when the governors of the Union met a few months since on board a Mississippi steamer and exchanged confidences on the troubles of executives, the subject of the doctors came up and it was almost unanimously agreed that these gentlemen had more difficulty in handling affairs with which the medical men have an interest than with any other part of their duties. We therefore hope that our readers will pity the sorrows of the governors, while we will take occasion to consider acts of the governors of some of the states in their dealings with the medical profession.

First we will call attention to that so-called reform governor of New Jersey, known as J. Franklin Fort. This well known member of the political profession took occasion sometime since to publicly attack the veracity of Dr. L. M. Halsey, chairman of the Legislative Committee of the Medical Society of New Jersey. This flagrant insult was telegraphed over the country in such a way as to bring the blush of shame to readers who were interested in the medical profession, and who were confident that only part of the truth was told in the telegram. Copies of the *Journal of the Medical Society of New Jersey* were eagerly watched for, in order to ascertain the truth of this interesting affair. It was found on page 627 of the May, 1910, number. We quote the first account as it appeared in the columns of the daily press. Then follows Dr. Halsey's statement, proving that Governor Fort had made all sorts of promises to obtain the support of the physicians prior to his election, and had constantly failed to keep these promises, as is the practice of gentlemen of his ilk.

THE MEDICAL PRACTICE BILL.

[From the *Daily State Gazette*, Trenton.]

With a declaration that Dr. Luther M. Halsey, chairman of the legislative committee of the State Medical Society, had lied about him before he was elected Governor, and during his term of office, Governor Fort brought to a sudden end yesterday a hearing which he was giving upon Assemblyman Ramsay's bill to regulate the practice of osteopathy in this state. The Governor's outbreak of anger was the climax of a hearing at which physicians of the old school had clashed many times with osteopathic practitioners who opposed the bill.

The New Jersey Medical Society was represented by Dr. Lewis, a professor of medical jurisprudence in one of the New York Colleges. In urging the Governor to sign the Ramsay bill, Dr. Lewis quoted the Governor as having declared in a public speech that he would do everything within his power as Governor to maintain the high standards of the medical profession in New Jersey. Dr. Lewis construed these remarks as a promise by the Governor that he would give favorable consideration to such a bill as was then under consideration.

"I never made any such a remark as that," said the Governor with some warmth, demanding from Dr. Lewis the source of his information. "I have it on very good authority," replied Dr. Lewis. "Who is your authority?" persisted the Governor. "Dr. Halsey," was the answer. "I thought I was getting pretty close to the source," replied the Governor hotly. Turning toward Dr. Halsey, at whom he pointed his finger, the Governor added: "You have been lying about me. This is not the first time, either. You lied about me before I was candidate for Governor and you have continued doing so ever since I have been in office. You are the only man who has tried to bulldoze me into signing this bill." Dr.

Halsey turned white under the onslaught of the Governor, but as he arose to reply the commotion in the executive chamber became so great that his voice was drowned. The Governor immediately declared the hearing at an end and retired to his private office, while the delegation dispersed.

Earlier in the hearing Governor Fort had had some sharp words with Dr. William J. Schauffler, of Lakewood, a member of his military staff and his family physician while staying at Lakewood.

Dr. Schauffler had cited an instance in which an osteopathic practitioner had made a wrong diagnosis of a case and had intimated that they were not reliable. Governor Fort declared that these remarks were ridiculous and that Dr. Schauffler himself was in the habit of recommending his own patients to consult osteopaths. As an instance the Governor said that when he had broken a rib last year, Dr. Schauffler had sent him to consult an osteopathic physician.

COMMENTS BY THE PRESS—GOVERNOR FORT USES LANGUAGE.

[From the *New York Times*, April 13th.]

It is hard indeed, to understand why Governor Fort, of New Jersey, should have been so savagely indignant in his denial that he once promised to do anything in his official power to maintain the high standard of the medical profession in his state. To have made that promise would not have been criminal—it would not, so far as we can see, have even savored of impropriety. If the Governor ever had any talk on the subject, with real doctors, he hardly could have said anything less, and his application of the short and ugly word to a doctor who told another doctor that he did say just that is certainly a most mysterious manifestation of anger.

What did the Governor say—that he wouldn't use his power in that way, but would use it in some other—to lower the professional standard, for instance? But that supposition is a little too absurd—of course Governor Fort said nothing of the kind. His excitement arose, it seems, in the course of a hearing on a bill regulating the practice of osteopathy in a way which the osteopathists do not like and the regular doctors do. Governor Fort's sympathies, one regrets to see, are on or tend toward the heterodox practitioners. Curiously enough, he thinks it is a sufficient answer to those who would establish a distinction between medicine and osteopathy to say that this or that real doctor occasionally sends a patient to an osteopathist for treatment. He is quite mistaken, and it is no answer at all, for a real doctor might very well admit that the manipulations to which the osteopathists resort would have beneficial results in properly selected cases.

That would be very far from admitting that osteopathy is anything more than an elaborate system of massage or that it is right treatment for all diseases, as is claimed by its followers. What the real doctors do, without exception, assert, is that it is an utterly wrong treatment for many diseases, and in New York as elsewhere they demand that these too ambitious masseurs be kept where they belong. There they would be, or might be, of considerable use, but without due regulation they are undoubtedly dangerous to public safety. It is only the due regulation, we are sure, that the New Jersey doctors ask, and it is a great pity that Governor Fort seems indisposed to help them get what they want.

[From the *New York Sun*, April 14, 1910.]

It is manifest that the relations between Governor Fort and the New Jersey Medical Society are sorely strained, and the result, we suppose, will be another victory for the osteopathists.

At the hearing on the Ramsay bill, which is intended to regulate the practice of these specialists, the council for the Medical Society attributed certain pledges or promises to the Governor, on what he conceived to be "very good authority." The Governor, with some heat, demanded more exact information, and learning that a certain doctor of Williamstown was the authority in question, he turned upon that unfortunate gentleman and delivered himself as follows:

"Oh, I thought I was getting pretty close to the spot! You have been lying about me and this is not the first time. You lied about me when I was a candi-

date for Governor and have been doing so ever since I have been Governor. You are the only man that has tried to bulldoze me into signing that bill."

From this it might be suspected that the Governor had been charged with some infamous enterprise, yet, notwithstanding the vehemence of his denial it seems he was only accused of having said in a public speech that he would "try in his position as Governor to maintain the high standard of the medical profession of New Jersey."

Apparently he has no such intention, and any one who accuses him of the least desire to maintain high standards is a liar. It is clear, then, that in Governor Fort the "bloodless healers" have found a good friend.

Did we have the space it would be interesting to detail how Dr. Halsey, in a letter to Governor Fort, dated April 20, 1910, calling down the honorable gentleman for his slander, and how the Honorable Fort humbly replies under date of April 22, trying to crawl out from under the statement and square himself with the medical profession of New Jersey. That he will be able to do this seems very problematic, since nearly every county society in the state has taken up the matter, and passed resolutions of confidence in Dr. Halsey, and condemnation of the bogus reformer, Fort.

RESOLUTION ADOPTED BY THE MEDICAL SOCIETY OF NEW JERSEY AT ATLANTIC CITY, JUNE 28, 1910.

WHEREAS, At the hearing on the Medical Practice Bill, at Trenton, Governor Fort publicly questioned the veracity of Dr. L. M. Halsey, the chairman of our Committee on Legislation, and treated the representatives of our society discourteously by refusing a proper discussion on the merits of the bill, by unceremoniously closing the hearing; therefore,

Resolved, That the Medical Society of New Jersey, in annual meeting assembled, hereby places on record not only an expression of perfect confidence in Dr. Halsey, but also of deep regret that the Governor of our state so lost control of himself as to reflect discredit upon his high office and dishonor upon the state; and moreover, that his actions have resulted in lowering the standards of preliminary educational requirements in New Jersey and the consequent loss of reciprocity between our state and the state of New York.

We now pass to Missouri, where a remarkable change is found in the political or social conditions of the people, which change it may be remarked is largely due to the profession of that great state. Formerly known as "Poor Old Missouri," the state was entitled to its name in many ways, but matters have changed, especially in the character of men who have held the position of chief executive in the past ten years. Not one of these executives has reflected more credit on the state than the present governor, H. S. Hadley. The remarks of Governor Hadley in his address of welcome to the American Medical Association in St. Louis, June 7, 1910, constituted a remarkable tribute to the medical profession. Governor Hadley was frank enough to say that the medical profession is setting an example to the legal profession, to which he belongs, and further said: "And if the other professions of this country—particularly my own—are to continue to rank among yours in respectability and public confidence it must enjoy the distinguished pleasure of imitating your example." He further said: "I have appointed, and I intend to appoint, on that board only members who receive the endorsement or

recommendation of the State Medical Association. You as a profession are able to put your own houses in order. You have cleaned up your own Augean stables by driving from your ranks the quacks and abortionists and the charlatans and the impostors. I want to say to you that the state board of health of the State of Missouri has been actively engaged on the firing-line, fighting a battle for a clean profession against the elements which foster disgrace and dishonor. In that regard I can say again, to the other profession, the legal profession, if it is to continue in public confidence and approval it must follow your example, because we have in our ranks quacks and abortionists and charlatans and impostors in our pettifoggers and shysters and ambulance-chasers, and a certain class of lawyers who are all the more disreputable because, with greater capacity for injury in our legislative and judicial lobbyists in eminent lawyers, who, in order to screen rich clients, violate the law and bring the legal profession into disrepute, securing for them immunity." Probably no chief executive of any state in the Union, unless it be Governor Hughes of New York, is now wider known or more highly regarded than Governor H. S. Hadley.

We next pass to Indiana, where there seems to be some trouble, as indicated by the following item copied from a recent issue of the *Lancet Clinic*. Just what the merits of this case are we do not know. Maybe the profession is at fault:

"Governor Marshall of Indiana, because of dissensions among the opposing factions on the State Board of Medical Examination and Registration, will try to make the members see that for the good of the medical profession in the state, and for the standing of the board, they should cease their wrangling. The word was sent as the result of the adoption of a petition when Dr. John F. Spaunhurst, osteopathist, was deprived of the privilege of examining forty-one members of the class in the subjects assigned to him. This is a result of the absurdity of recognizing sectarian medicine, and argues for a single board to examine upon all the medical subjects except therapy."

We now come to the State of Illinois, to consider the attitude of Governor Charles S. Deneen toward the representatives of the organized medical profession as represented by the Illinois State Medical Society. We approach this subject with a great deal of hesitation because of the peculiar conditions existing in Illinois, in a political way, at this time. Governor Deneen has for so long been positive in his statements that he would clean up the medical situation in this state that it is difficult for us to believe that he does not propose to make good. The state board of health is now composed of only three *de jure* members, none of them known outside of the county in which they live, and four *de facto* members, who in justice to themselves should either be reappointed or their successors provided. Among these four *de facto* members are Dr. George W. Webster of Chicago, acting president of the board, and Dr. James A. Egan of Springfield, acting secretary of the board, against

whom, especially the latter, so many complaints have reached our ears in the past ten years. The latest utterance of Drs. Webster and Egan in opposition to the report on the Carnegie Foundation was mentioned in the July issue of this journal. We understand that Governor Deneen has in the last ninety days renewed his promise to appoint four new members of the board, and pending action by the governor on this matter we withhold further criticism of existing conditions.

THE AMERICAN DRUGGISTS' SYNDICATE.

Mr. C. H. Goddard, signing himself Secretary of the American Druggists' Syndicate, is sending out letters to physicians in all parts of the country, making large offers of saving in connection with the sale of drugs, instruments, fixtures and supplies. As this is ostensibly for the protection of public health, the suppression of the nostrum evil and the increase of professional members, it is probable that a considerable number of our members will be attracted by the advertisement. In this, as in many other instances, we would suggest that our members "go slow" in patronizing such a scheme, as it appears "too good" on the face of it, and our information from druggists who are members of this syndicate does not correspond with the tempting offer made by Mr. Goddard.

THE STATE BOARD AND THE CARNEGIE FOUNDATION REPORT.

The squirming and twisting; the denial and acknowledgement; the air of injured innocence and the promise of reformation which the State Board of Health has put up in the last sixty days reminds us of one of the comic operas staged by Francis Wilson some years ago. Wilson taking the part of a hobo was brought before a judge on a charge of burglary. His plea was, "I am innocent;" "It is my first offense;" "I can prove an alibi." Again we may justly inquire, who is responsible for this *de facto* organization which continues to make Illinois the rotten spot of medical America.

The latest manifesto of the Board appears in the columns of the *Illinois State Journal*. This daily appears to have succeeded the monthly Bulletin as a convenient and ready medium to convey the peculiar views and defenses of the Board to the patient public. *The Journal* has one great virtue never possessed by the Bulletin. It appears regularly and has some actual news in the columns not devoted to the Board.

In order that our readers may know the workings of the master mind of the Board we reprint this account of his recent meeting.

Chicago, June 25.—Members of the Illinois State Board of Health, at their semi-annual meeting, hurled back at the Carnegie Foundation for the Advance-

ment of Teaching the report criticizing practically all the medical schools of Illinois and condemning some of them. The writer of the report was convicted, by his own statements, in the view of the health board, of a lack of knowledge of the conditions which he presumed to attack.

Nevertheless the board took cognizance of the criticism of the Council on Medical Education of the American Medical Association, which to a degree was similar to that of the Carnegie Foundation, and took steps to remedy the defects alleged to exist in certain of the Chicago medical schools, and also adopted a resolution, which had been in contemplation for some months, which probably will put the so-called light medical schools of Chicago out of existence, except as preparatory schools.

Secretary James A. Egan of the State Board laid before the members at a meeting in the Great Northern hotel that part of the Carnegie Foundation report relating to Illinois, but before he had proceeded far in the reading the board members, by a unanimous vote, ordered the report laid on the table, because, in the language of the motion, "it portrayed conditions which did not exist, and evidenced a lack of knowledge on the part of the writer of the laws of Illinois and the powers and responsibilities of the State Board of Health."

Especial exception was taken by the board to the charge that in not one of the eight medical colleges of Illinois condemned by the Foundation, but recognized by the State Board of Health, are "clinical opportunities furnished in proper abundance." This statement was characterized as "unworthy of serious consideration."

The writer of the report, Mr. Flexner, was accused by the State Board of Health of ignorance of the medical laws of Illinois. Mr. Flexner condemned the State Board for permitting medical colleges to accept as evidence of adequate preliminary education a certificate of examination of the state superintendent of public instruction, yet the state law prescribes that the state superintendent's certificates "shall be considered satisfactory evidence of preliminary education." This law, the members said, had been upheld by Attorney General Stead, who has ruled that the board has no right to go back on the state superintendent's certificate.

The board thus having disposed of the Carnegie Foundation's criticisms, the committee on college reported having made inspections of the four institutions recently pronounced entirely "unacceptable" to the American Medical Association—the Jenner, the Reliance and the Hering medical colleges and the College of Medicine and Surgery. While the committee did not absolutely condemn any of these schools, it reported that improvements were needed in all. The board ordered that another inspection be made shortly after the beginning of the season of 1910-11.

The resolution aimed at the night medical schools, and which is expected to put them out of business, reads as follows:

"WHEREAS, the State Board of Health of the State of Illinois, after a careful and extended observation of the courses of study in the medical schools of Illinois and other states which now give or have given instruction during the evening hours, has determined that proper and sufficient clinical and hospital instruction cannot well be obtained during the evening, or at night, and,

"WHEREAS, the State Board of Health of Illinois is of the firm conviction that it is not practicable for the student who devotes but three or four hours of each day, during the evening, to the study of medicine, to perform properly the clinical and didactic work now commonly embraced in the third and fourth years of the curricula of reputable medical colleges throughout the United States and fit himself to be a qualified practitioner of medicine, competent to treat the sick and suffering; therefore, be it

"*Resolved*, That the State Board of Health of the State of Illinois, acting under the provisions of an act to regulate the practice of medicine in the State of Illinois, approved April 24, 1899, will determine not in 'good standing' any medical college or institution in which, after June 30, 1911, all or the major portion of the clinical and hospital instruction or didactic work such as is now

commonly embraced in the third and fourth years of the curricula of reputable medical colleges throughout the United States, is offered during the evening hours, or at night time."

The State Board of Health gave much further consideration to the report of the Council on Medical Education of the American Medical Association on the medical colleges of the United States, and directed the secretary to keep the report on file for further reference. The secretary called the special attention of the board to the fact that one of the medical colleges of Chicago severely condemned by Mr. Flexner, one which, according to him, occupies a wretchedly dirty building, has but meager equipment, does not "furnish clinical opportunities in proper abundance" and "prepares candidates for the Illinois State Board examinations in unmistakable contravention of the law"—had been placed in the first class by the Council on Medical Education. This fact, in the opinion of the board, evidenced absolute unreliability of Mr. Flexner's report. It is an open secret that Mr. Flexner made his "inspection" of this college through the aid of the janitor and a few students who were hanging around. Members of the faculty of the college claim that they have never met Mr. Flexner and have no official knowledge of his presence in the institution.

The board also considered with interest a table of State Board examination statistics taken from *The Journal of the American Medical Association*, which, in the opinion of the members of the board, successfully refute the charge so frequently made of late by physicians of Illinois wont to disparage their own state, that Illinois passes more men than other states.

At this meeting the State Board of Health revoked the license of Dr. David Apfelbaum of Chicago for advertising under a fictitious name and for fraudulent use of the United States mails.

While the meeting was in progress Judge Landis of the Federal Court sentenced Dr. Alexander Chittick to serve sixty days in the county jail for fraudulent use of the mails in connection with the sale of diplomas from the "Chicago Medical University" and the "Crescent Medical University."

Dr. Chittick's license was revoked by the board for these offenses May 24.

THE REPORT OF THE CARNEGIE FOUNDATION AS VIEWED BY THE EDITORS OF THE STATE JOURNALS.

Seldom, if ever, has any publication excited the medical world as has the recent report of the Carnegie Foundation on the question of medical education and medical schools in America.

Nearly every medical journal in the country has expressed an opinion upon this report, and we propose in this and succeeding issues to give our readers an abstract of the statements made in journals representing the medical profession in every state in the Union.

We recently sent a letter to every editor of an official state journal, expressing a hope that the report receive consideration in the journal under his control. Up to this time we have received reports from several journals, an abstract of which we present herewith; it gives us great pleasure to state, almost without exception, the report of Mr. Flexner is endorsed.

"The Report of the Carnegie Foundation on Medical Education was made public about the time the A. M. A. Council made its report. The two investigations were made independent of each other, but check up very well together. The Carnegie Foundation differs mainly in severity and frankness, being much more specific and extensive in its criticism

of the sub-standard institutions. Many institutions are pronounced utterly hopeless. Our Texas schools come in for their share of criticism, but fare better than many schools which have heretofore been thought to be their superior. It seems that money and lack of opportunity 'in the present generation,' is our main fault—that we have too many institutions for all to thrive and do the work of first-class educational institutions on the income of their pro rata share of the patronage alone. The report considers it a 'regrettable mischance' that located the Medical Department of the State University away from the main department, urging, among other reasons, that it would be easier to attract and to hold suitable teaching force, and that the stimulus of the whole institution would promote growth of a productive spirit. In this connection, we might parenthetically recall the recent resignation of Professor Austin, of the Chair of Chemistry, and the reasons advanced by him for resigning.

"Whether there be an injustice in these reports or not, they will serve to put our medical colleges on their mettle, and will contribute no little to the tendency of the times to a reduction in the number and an increase in the value of such institutions, either by elimination or consolidation." —*Texas State Journal of Medicine.*

"This Carnegie report is most complete, accurate and just, absolutely without favoritism, and will do more to place medical teaching in America on a sound, scientific basis than all preceding efforts. Its influence is already felt and the report has not been isued one month." —*Committee of Ohio Alumni Association.*

From the forthcoming issue the editor of the *Journal of the Michigan State Medical Society,* says:

"This report we feel is a long step in advance. There is no question that we have too many medical schools, and too few really good ones. Perfect candor must admit that Mr. Flexner in making this study, and from his point of view, has been absolutely impartial. The schools in the United States and Canada which receive his unqualified endorsement could be counted on the fingers of one hand.

"The criticism in some instances is of a minor defect, or a defect due to location, resources or something similar, while the school is honestly trying to do good work—to make the most of its opportunities; but how often is it necessary to accuse the school of fraud?—of advertising more in its catalogue than it gives to its students.

"This report comes to us from the scientist whose ultimate effort is to secure the highest results possible from a teaching standpoint. The most of erudition combined with the cultural broadening obtained in university associations is the end sought. The question of time and expense are of minor import. The ideal condition striven for is a medical school fully equipped and an integral part of a liberal university, having its domicile within the confines of the university plant. More or less of a college education is urged as a preparation for the study of medicine, and in those cases where the university is located in a small town, as in Michigan,

a clinical year in a hospital is proposed to supply the defects due to the necessarily small clinics.

"The truth, the justice, the force of this report is best evidenced by the number of schools which have already announced improvements.

"Even a cursory reading of the report, which gives a panoramic view of all the medical schools in this country and Canada, showing which are weak and wherein they are weak, which are strong and wherein they are strong, what they have and what they lack, wherein they tell the truth and wherein they lie, should stimulate the weak schools to take measures to strengthen themselves or go out of existence, and the stronger schools to improve their equipment and instruction. Some schools, especially the osteopathic schools, are schools in little more than name. There is an abundance of material for future comment."—*Washington Medical Annals.*

REORGANIZATION OF THE FACULTY OF THE UNIVERSITY OF PENNSYLVANIA.

Dr. A. N. Richards, professor of Pharmacology in the Medical School of Northwestern University, Chicago, has been elected to the chair of Pharmacology and Therapeutics, in the Medical Faculty of the University of Pennsylvania, at Philadelphia.

Other elections have been Dr. David L. Edsall to fill the chair of Therapeutics and Practice of Medicine; Dr. Richard M. Pearce to the chair of Pathology. Dr. Pearce will also direct the work of the Department of Research Medicine recently established by an endowment of $200,000.

Dr. Allen J. Smith will occupy the new chair of Comparative Pathology, and be at the head of the newly instituted course of Tropical Medicine.

Dr. Paul Lewis will be the professor of Pathology and have charge of the Laboratory of the Phipps Institute for the study of Prevention and Treatment of Tuberculosis, now an integral part of the University.

We are glad to note the important development of the methods of medical teaching in the old Pennsylvania School.

THE NATIONAL DEPARTMENT OF HEALTH.

All the people are not fooled by the attempted clouding of the issues on the part of the proprietary interests, the Christian scientists and others and the more sensible portions of the country already appreciate the necessity of devoting as much time and money to the health interests of the people, as is given to the conservation of soil and live stock. The following editorial note from the *Northwestern Christian Advocate*, one of the leading publications of the Methodist Church, indicates that the editor is thinking along right lines:

THE NATIONAL HEALTH.

The Owen bill for a national department of health is meeting with bitter opposition. The chief newspapers of the country are carrying large advertisements headed: "Do you want the doctors' trust to be able to force its opinions on you?" No attempt is made to discuss the provisions of the Owen bill, and just how its proposed requirements for the protection of the public health would force any opinions upon anybody, does not appear. Some things are apparent, however, when inquiry is made into the forces behind these advertisements. It appears that the advisory board of the National League for Medical Freedom, which signs these advertisements, contains the publisher of a magazine which has long been a defender of patent medicine and proprietary interests. It also contains the president of the American druggists' syndicate. With these are associated the president of an anti-vivisection society, some "mental leaders," and a prominent journalistic advocate of "new thought." It thus appears that the private warfare of these latter gentlemen against the American Medical Association is being used by certain interests, who have their own reasons for being willing to spend large sums of money in the attempt to prevent the creation of a national department of health. It is important that the public should not be deceived by this introduction of side issues for the purpose of distracting its attention from the necessity of making immediate provision for the protection and promotion of the national health.

DR. HUBER'S DEATH.

Dr. Jacob Huber, who had practiced medicine and surgery in Pana for 44 years, died in that city June 28, aged 70 years. Dr. Huber was born in Ohio, graduated from the Ohio Medical College, Cincinnati, and immediately enlisted as a surgeon in one of the Ohio regiments, and served through the war, making the march to the sea with General W. T. Sherman. After the war he located in Pana and soon built up a very large and remunerative practice. At the time of his death he possessed an estate of not less then $200,000 which might have been much increased had the Doctor devoted himself particularly to the business of making money. Possibly no citizen in Christian County possessed more friends than Dr. Huber, and this was well exemplified on the occasion of his funeral, when every business house in Pana was closed.

Dr. Huber was a perfect type of the old time family physician, and the fact that a large number of the rising generation were named after him is the best evidence of the hold he had on the affection of his patrons. Dr. Huber had served as mayor, councilman and member of the board of education; was active in G. A. R. and Odd Fellows circles, and both organizations were remembered in a substantial way prior to his death.

Dr. Huber remained interested in the work of his profession during the entire time of his practice, and was a faithful attendant at the meetings of the District Medical Society of Central Illinois, of which he was one of the founders. His death leaves a large void in the ranks of the Christian County profession.

THE NEXT LEGISLATURE.

In our correspondence columns will be found a communication from Dr. Mammen, president of the McLean County Medical Society and one of the level-headed members of the profession in this state.

We hope our readers will carefully read and seriously consider the statement made by Dr. Mammen, and that each county society will take the matter up at the next legislature meeting, secure pledges from every candidate for the next legislature, that he will help for the interests of legitimate medicine. The time for modesty is past.

DR. STUBBS' COMMUNICATION.

In our correspondence columns will be found a communication from Dr. James E. Stubbs, second vice-president of the society, giving his views on the status of the "Rump Session" of the House of Delegates. We notice this only to state the fact that the best legal authority has given an opinion; that when Dr. Collins announced that the vote on adjournment was in the affirmative the society stood adjourned. It was absolutely unnecessary for him to make any announcement or declaration whatsoever. Of course, Dr. Stubbs is entitled to his opinion, and we are glad to give his communication space in THE JOURNAL.

MEDICAL ASSOCIATIONS PROTECT PUBLIC.

We have received the following letter from one W. H. Watson, who seems to be a composer of religious hymns and a writer on art and music in the magazines. We have had no opportunity of verifying the charges made in this letter and of course insert it without assuming responsibility for the statements made.

CHICAGO, 2011 WABASH AVE.

REASONS WHY THE MEDICAL ASSOCIATIONS DESIRE TO PROTECT THE PUBLIC.

To the Editor:—Having taken the Christian Science lessons, I respectfully inform honorable members of that cult, who are ignorant of facts, by quoting two of the many deplorable results of malpractice:

I visited a lady in Chicago who had been treated by Mrs. Eckel, a Christian Science healer, who demanded $100 in advance. Failing to heal, she advised the patient to enter a medical hospital.

Another Science healer, Miss Mandeville, tried to heal a case of diphtheria by telephone at Davenport. The coroner's jury's verdict was manslaughter, but the grand jury said that the afflicted patient's death was caused by religious fanaticism and dropped the case. This lady is still trying to heal in Chicago.

The medical authorities should suggest to Christian Science healers the advisability of expelling from their ranks these people whose cupidity is so proverbially known.

WILLIAM H. WATSON.

Correspondence

PREPARE FOR THE CONTEST.

BLOOMINGTON, ILL., June 21, 1910.

To the Editor:—In view of the raising of money to be used for legislative purposes by the osteopaths, and in view of other indications from sectarian bodies of their intention to endeavor to break into the medical profession by cheap and short cut routes, it would be well, it seems to me, that the profession of our state place themselves squarely and unanimously upon a single platform.

At the last session of the legislature, the argument which was most effective in convincing legislators of our sincerity, was the argument that there should be but one door of admission to the practice of medicine in the state. The average legislator and his average constituent, can understand us if we demand higher qualifications of the medical man, and one square deal for all.

The profession that takes responsibility of health, life, and the physical welfare of the community, cannot be too well fitted for its duties. It is therefore for the highest and best interest of the people of this great state, that only the best fitted men shall enter the ranks of the medical profession.

There is no side door for entrance into the legal profession, nor any special laws enacted for cults and isms in the teaching profession, why should there be such in the medical profession? The people of the state are face to face with the problem whether or not there shall be multiple boards, to the number of which there is no limit, for the legalizing of inferior and partial methods of practice. The medical profession is broad enough, big enough, and the opportunities for practice in it multiple enough, to be all-inclusive. Let us, therefore, as a profession, go before the people and before the legislature if need be, and ask for legislation which shall be primarily and supremely in the interest of the people of the state, and never in the interest of any special cult or school of practice.

Let us have one board which exercises supervision over all medical matters in the state, including the examination of candidates for practice. Let us demand that such examinations be reasonable, practical, and thorough for all alike, whether he belong to the regular profession or tack on to his name some "path or "fad" or "cult" or "ism." Then having passed such examination let him be free to become osteopath, homeopath, menteopath, or walk in whatever "path" his inclinations may lead him.

The medical profession of our state, as a part of the people of the state, cannot afford to see men of partial or inferior qualifications admitted to practice. In our future demands for legislation, let us not ask for changes from the present law which might lead to confusion or to the enactment of retrogressive legislation, but let us seek to get efficient and

thorough administration of what we have, and unite in the demand for one board of health, and one door of admission to the profession. It seems to me that we should thoroughly understand the ability of the board of health to cope with the present situation as well as its limitations under the law.

Our State Society and the Board of Health should cooperate in the interest of the people of this great state. Our profession, the Board of Health, the legislature, and the people, should cooperate in purifying the profession of incompetents and undesirables. It would seem to me that we should have no difficulty in convincing legislators of our sincerity, and the reasonableness of our demands.

I would suggest therefore the following platform:

1. One door into the medical profession
2. One reasonable standard of requirements on examination for admission.
3. One set of laws for all.
4. One competent board to administer the law.

Such a platform ought to win for advanced standards of efficiency.

Very truly, yours,

E. MAMMEN.

310 Griesheim Building.

DR. STUBBS' VERSION.

CHICAGO, July 2, 1910.

To the Editor:—"He who fights and runs away may live to fight another day."

As you have given one version of the last State Medical Society meet in the ILLINOIS MEDICAL JOURNAL, please give the same publicity to my report. It is my right and I demand it, as you have, in your judgment, cast aspersions on the winding up of the business of the house of delegates. I was there and know whereof I speak.

First, There was no "Rump Session," no "called session," but a continued session from its opening to its adjournment under the gavel held in my hand.

Second, "Insurgents!" the word sounds good in the ears of every true American, and he who loves liberty above oligarchy or plutocracy. Without insurgents where would this nation be to-day?

"The insurgents" rode about the town and cried, "Liberty, liberty," and called upon the people to join them. J. Adam works, 1-103.

The insurgents of the Chicago Medical Society and the State Medical Society have cried liberty, liberty, and called on the rank and file of the profession to follow; and they are following, as witness the results of the last election in the Chicago Medical Society, and the State Medical Society are coming sure.

Because the workers for progress, and changes in the politics of the Society, the opposition call us insurgents. Well, the name is honorable. By the same rights that you call us insurgents we could call you "mossbacks, long ears, plutocrats," etc., etc. But no, we do not, simply call you

brother physicians who do not look from the same exalted vantage point that we do and see the trend of coming events as they are marching forward.

We are for progress in higher medical education and for untramelled medical politics.

Allow me to make some corrections to your last paragraph on page 754 of the June JOURNAL. "As soon as Dr. Lydston's resolutions were presented to the House of Delegates a motion was made to lay them on the table. Some one who saw how things were tending moved to adjourn. The motion was put. From the vote cast, *viva voce*, it seemed the noes had it. Dr. Collins, the vice-president, who was in the chair, said the ayes had carried. Immediately a score of voices called for a roll-call, which was their right to do. During the demand for a roll-call, the vice-president vacated the chair and with many of the hungry delegates (it was after 1 p. m.) made a wild rush for the door, the political leaders in the van. Some of the leaders remained in the vestibule of the hall and peaked and pricked up their ears to hear and see about what was doing. But a very disagreeable feeling in the epigastric region of their corpus overcame their curiosity and they too "ducked" for refreshments. The vice-president, Dr. Collins, never officially declared the House adjourned, so say twenty other delegates; so says the official stenographer. At the call of a number of delegates I immediately took the gavel and declared the House of Delegates still in session. In order to establish the fact that there was a quorum present the secretary, Dr. Weiss, counted those present (at whose request I know not). He stated (and I have the evidence that he made the following statement) there were 19 present; while that was doubted and a great "talkfest" was going on I did some counting and I made out 23 delegates in the room. While the talkfest was proceeding Dr. Moyer came in, making, according to the secretary's statement, 20. Being the official officer (second vice-president) *de facto* president, I declared a quorum and asked the House to proceed with business.

The motion to adopt Dr. Lydston's resolutions was put and carried unanimously. During this time several other delegates came in to the hall.

Dr. Moyer's report was read and adopted, and an auditing committee appointed. Also a vote of thanks to the city for courtesies, etc., passed, and we adjourned to meet May, 1911, in the city of Aurora.

You also stated "a minority, said to be 18 in number, placed Second Vice-President Stubbs in the chair and we understand pretended to take on the functions of the delegates of the State Society." Let me correct: I did not pretend, but actually, legally did take on the functions of the State Society. There was no "Rump Session," no called session, but a continuation of the regular session, without a recess or any stopping of the machinery. Let me say the leaders showed the white feather, turned tail and ran; were afraid to meet the issue squarely.

By the termination of the last session of the State Medical Society learn a lesson; do not leave any body in session until it has been officially announced as adjourned by the presiding officer.

Now, my dear brother Editor, in the language of the great B. B. Spalding, "you are off of your base." The fans have rattled you.

I think the above corrections are due to the profession.

Yours fraternally, JAMES E. STUBBS, M.D.,
Second Vice-President, S. M. S. of Illinois.

DR. CRUTCHER COMMENDS THE JOURNAL.

ROSWELL, NEW MEXICO, July 19, 1910.

DR. GEORGE N. KREIDER, Springfield, Ill.

Dear Dr. Kreider:—Without meaning to be invidious, I believe the current issue of the JOURNAL to be the best for many a long day. It is full of meat, from cover to cover. I am glad that you were courageous enough to reprint that juicy report from Flexner, and also to give "Old Hahnemann" a well merited shot. If you can find space for it, I wish you might reprint what Flexner has to say concerning "Medical Sects," which is full of good food for thought.

HOWARD CRUTCHER.

COUNTY AND DISTRICT SOCIETIES.

ALEXANDER COUNTY.

The Alexander County Medical Society held its regular monthly meeting at the Commercial Club rooms in Cairo, July 21, 1910. Dr. S. B. Cary, the president, presided, and there were a goodly number of physicians of the county present. Dr. W. F. Grinstead, of Cairo, read the paper of the evening on the subject: "A Rare Danger Lurking In a Broad Ligament Cyst." The essayist revised briefly the anatomy of the broad ligament and the origin of cyst of that region, then took up the report of a case that he had recently operated upon. The tumor was a sessile one. The unusual complication was a cord running across the anterior surface of the growth which was at first thought to be a cicatrical band, a closer inspection, however, revealed the fact that it was ureter of that side. The dissecting out of the cyst was a difficult task, made especially so because of the fact that careful inspection revealed no place where two membranous surfaces united offering a point of attack. The complete removal, however, was accomplished by draining and packing tightly and the dissecting very carefully. No drainage tube was placed, the operation wound being closed completely. The patient made a complete recovery with no evidence of return. Dr. W. C. Clark, of Cairo, opened the discussion, dwelling at length upon the origin of such tumors. The majority of such tumors have their origin in a degenerated ovary. He thought a good idea of the character of the cyst of the pelvic region could be obtained by an examination of their fluid contents. He held that, in view of the great difficulties in the way of dissecting out such tumors, the best procedure as a general rule was to incise such growths and stitch their walls to the abdominal walls and drain in that way. In view of the serious results that would follow from the mistake that might easily have been made in the case presented one should be always on the lookout for the ureter in operating on tumors of the pelvic region. The discussion of cysts was further continued by Drs. W. H. Fields, Jas. M. McManns, Samuel Dodds, J. B. Hibbits, E. S. Dickson, after which the society adjourned.

JAS. M. DUNN, Secretary.

COOK COUNTY.

CHICAGO OPHTHALMOLOGICAL SOCIETY.

Meeting of May 16, 1910.

The President, DR. W. A. FISHER, in the Chair.

MAGNET OPERATION AND SKIAGRAMS.

Dr. E. F. Snydacker read a paper on this subject and exhibited some illustrative pictures.

Dr. L. R. Ryan, of Galesburg, recently had had two cases where he felt positive there was a foreign body in the eye, but was unable to locate it. He had no means of making a skiagraph, but used the magnet without success. A physician in a large city made a skiagram, found and removed the foreign body. In the second case there was so much hemorrhage that it was impossible to locate the body. He followed the expectant plan of treatment for three or four weeks, and after the hemorrhage had been absorbed a piece of steel was located and removed. In this case the giant-magnet did not work right. It was tested before the operation and seemed to be all right, but during the operation it failed. He found subsequently that one of the connecting wires had burned out. The foreign body was located in the retina above the iris, and it was drawn down to the lower and outer quadrant, where an incision was made and the foreign body extracted.

Dr. C. H. Beard thought that one point was exceptionally well taken, and that was that we are too apt to despair of saving some of these eyes. A man was punching boiler plate with a punch of a diameter of five-eighths of an inch. It was poorly set in the machine and nearly half of the face of the punch broke off, penetrated the upper lid, entered the globe, tearing its way in and making an enormous opening. The steel was removed with the giant-magnet nearly a year ago. The man has a satisfactory eyeball of normal tension, but has no vision. The eye is quiet, however, and the globe is of good shape and form.

Dr. Henry Gradle felt that the conclusions of Dr. Snydacker would be concurred in by all surgeons of experience. He had had a few experiences which do not come within the range of the paper, however, but were interesting in this connection. One of the cases illustrates the possibility of a small piece of iron remaining in the eye and ultimately disappearing by complete absorption, without causing siderosis. Toward the end of the seventies a man received a small chip in the eye, which entered the lens. The patient was seen a few days afterward, and there was no reaction, and as knowledge of the magnet extraction was limited, Dr. Gradle concluded to do nothing. The object was absorbed. The eye was quiet many years. Fifteen years later the man had sudden occlusion of the macular arteries of the other eye, making him totally blind for a time. There was a large central scotoma and a cataract was present in the injured eye. A discission of the secondary cataract was made and almost normal vision obtained for the primarily injured eye. No siderosis was demonstrated, nor could any foreign body be located with the ophthalmoscope. The small piece of iron in the lens had become completely absorbed. Recently another instance was met with where a small piece of iron remained in the eye about twenty years and escaped detection. It became absorbed, but caused considerable damage, perhaps directly, perhaps indirectly. The man complained of rather poor sight and some discomfort. On examination there was the appearance of a simple glaucoma, not very well pronounced. Excavation was not complete. The hardness was doubtful to the finger, but the pupil did not react. The iris appeared somewhat atrophic. The entrance wound of a small piece of iron could be demonstrated in the cornea and a corresponding rent in the iris near the periphery was seen. On looking obliquely into the eye under mydriasis a small piece of iron surrounded by a cloud-like mass in the choroid could be observed. There was no siderosis. Vision was probably reduced, and the field of vision was more characteristic of simple glaucoma than of siderosis. The skiagraph showed nothing. The piece of iron or steel has been absorbed and the man is suffering from simple glaucoma following the lodgment of a foreign body in the choroid about twenty years ago.

Another patient was one whom Dr. Wood saw. It was a case in which Dr. Gradle was associated with Dr. Pinckard. A young man had his glasses broken and it was assumed that a large piece of the glass got into the eye. After a day or two of irritation the eye became perfectly quiet. Dr. Pinckard saw him two weeks before and the eye was free from irritation, the pupil freely dilatable under atropin. Vision was far from normal. In the eye there were recurrent retinal hemorrhages every day or two. The vitreous was clear, but there was something that looked suspicious of a foreign body. The skiagraph showed a very sharp outline of a somewhat comma-shaped object, not over one-quarter inch in height and 1 or 2 millimeters in width.

After a few days we came to the conclusion that if a foreign body could not be excluded, the eye was too dangerous to remain, although it was free from inflammation. We opened the eye, went in with forceps, but did not succeed in removing anything. The eye was then enucleated, and on opening it we found that about one-third of an ordinary spectacle glass was standing vertically in the vitreous in such a manner that the *x*-ray had taken a profile view, showing it as a comma-shaped object. The glass was fully more than one-half inch in length.

Dr. Snydacker, in closing, said that he had examined many pieces of steel under very high magnifying glasses. Removing a piece of steel is not a simple piece of work, because the steel is covered with little barbs. Sometimes it is studded with fish-hook-like projections, which attach themselves to the surround-

ing tissues when removing the object. He had read of many descriptions of drawing the foreign body forward through the small incision, but he has never been able to do that, especially when the steel had become encapsulated. Dr. Snydacker thought it was better not to withdraw the foreign body through the original opening. It depends entirely on the location of the body and the possibility of injuring the lens and cilia during the withdrawal. It is better to draw the body into position, where an incision can be made safely, and the object withdrawn. A skiagraph should be taken in every case regardless of the fact that the object has been located with the ophthalmoscope.

REPORTS AS TO THE CONDITION OF THE CATARACT CASES OPERATED ON BY DR. GREENE.

Dr. William A. Fisher reported that his case had done nicely in every way and that patient's vision was 20/20 with a plus 10 D.

Dr. John R. Hoffman also reported on a case that Dr. Greene has operated on.

Dr. Willis O. Nance reported that in his case there had been considerable reaction following the operation and the healing of the corneal wound was slow. The eye is still red, although there is no indication, nor has there been, of iritis. The pupil is large and elliptical in form. There is a distinct membrane, probably remains of the zonule covering fully two-thirds of the pupillary space, and corneal-striæ are visible. Vision is 20/120, and there is no improvement with glasses.

Dr. Nance had the eye dressed at the end of the forty-eight hours following the operation, believing that it is positively unsafe to leave an eye operated on for cataract unnoticed for six or seven days as advised by some operators.

Dr. Clark W. Hawley reported on two cases, in which, except for some complications incident to meddlesomeness on the part of the patient, the progress had been very satisfactory. In one case, that of an old lady, vision is about 20/40. With a plus 4 or 5 she reads newspaper print. The interior of the eye is clear. The second patient, a man, has 6/36 vision, and his eye is clear.

Dr. H. W. Woodruff reported that his patient had had an injury, a piece of wood striking the eye eight years ago. The pupil was eccentric, and could not be dilated. The other eye was myopic and the seat of the diffuse chorioiditis. At the time of operation a slight amount of vitreous was lost. The eye was tested rather frequently and the wound healed slowly. The anterior chamber did not reform for some time. The wound lips did not approximate well, so that at the present time there is a high degree of astigmatism. There is 20/30 vision with a plus 6, combined with a plus 6 cylinder.

Dr. W. H. Wilder reported that his patient had passed through the operation satisfactorily, the wound healed well, and there is 20/50 vision, but a high degree of astigmatism, 8 D., with axis 45. There was a great deal of redness for a considerable time after the operation. There is not, he said, the tendency to iritis or iridocyclitis in the Smith operation that there is in the ordinary operation, and therefore he did not understand the condition present in his case.

Dr. Oscar Dodd said that his patient was 81 years old and not in good health. The operation was successful; the bandage was changed on the ninth day and the eye was then in good condition. The wound had apparently healed. Forty-eight hours later the eye was irritated and the wound was leaking. The eye quieted down for a few days. The only complications that occurred were that the lips of the angle of the iris became adherent to the wound, pulling it up and making the pupil elliptical. There was a large amount of astigmatism, from 12 to 15 D. Vision was 20/200, with an 8 D. cylinder, but at the present time it is 20/100, with a plus 5 combined with a plus 10. The media is perfectly clear.

Dr. E. V. L. Brown stated that he had seen about sixty patients in Dayton on whom Dr. Greene had operated, but that in his opinion the results were not as good as those obtained with the ordinary cataract operation.

Dr. D. W. Greene said that these cases are absolutely different from those of the old operation in everything. Some of the things reported to-night as adverse criticism will eventually turn out all right. He had had about 600 of these cases

now, and many of the conditions referred to to-night have happened, but they have all turned out better than one would expect. He has not had these things happen in any considerable degree, and that is probably because of the fact that an operator is handicapped seriously when he operates away from his own operating-rooms.

In regard to Dr. Nance's case, Dr. Greene had seen the condition he described. The lens came out perfectly in the capsule; the membrane in the pupil can only be some remnant of the suspensory ligament. Dr. Greene's judgment is that the weakest thing about the whole Smith operation is the large section that is necessary to get the lens out. All the trouble encountered relates to the section of the Smith cataract operation, and the section will determine the amount of astigmatism. If one succeeds in getting a straight section, a high degree of astigmatism will not result. If primary union is secured a low degree of astigmatism will follow, but if delayed healing supervenes astigmatism is high, but it gradually becomes less, as is shown in Dr. Dodd's case, where it was reduced from 12 to 15 to 5 D. Myopes are bad subjects, as a rule, because of the low tension of the eye.

If normal tension is present there will be no trouble. If the tension is low, trouble will result. The section made suits the operation, which is an upsetting of the lens. If a circular marginal section is made to upset by pressure below, the upper quadrant of the lens will be constantly in front of the section. Major Smith makes a corneal section and gets more astigmatism than when the peripheral section is made. But the corneal section has many advantages. There is no cystoid healing.

You must remember that meddlesome treatment of cataract wounds is bad practice. Dr. Greene had the misfortune of seeing a total suppuration of the globe, but what good would it have done to have seen that infection on the second day, because the globe is hopelessly lost, no matter when the suppuration is discovered. In Dr. Dodd's case the wound was leaking; the section involved the upper third of the cornea. The 3-millimeter section will heal much quicker and better than the large section made in extractions within the capsule. The size of the section is the weakest point of the operation. The lens cannot be extracted without rupture of the capsule unless a large section is made. If the capsule is ruptured the ordinary capsulotomy operation has been done. Dr. Greene has not seen many cases in which there were iris entanglement. Dr. Brown, Dr. de Schweinitz and Dr. Standish saw about sixty of his cases, and there were only two cases of iris entanglement among the number. That is as good as can be done with the old operation. The pupil is drawn up in many of these cases; in fact, a high pupil is the rule. The doctor suggested to Major Smith that he make the iridectomy from below instead of from the side, as he was in the habit of doing. He has now adopted this plan.

Dr. Greene has seen the black spots mentioned. That is nothing but pigment from the posterior surface of the iris. The reaction in these cases is more severe than in the ordinary operation, but if they are watched it will be seen that while there is redness there is no pain. The redness is more of an irritation than an inflammation. It is a trauma and not an infection, which is really to be expected in this operation.

One advantage of the operation is the fact that an immature cataract can be removed easily and quickly. In removing the lens the pressure on the cornea must be at a point opposite the lower border of the lens. This tears the suspensory ligament and the intraocular pressure forces the lower edge of the lens upward and forward toward the corneal incision. It pops out and is held only by the zonule. The lens comes away clean without any shreds hanging to it. There is no escape of vitreous, because as soon as the lens pops out the lips of the corneal wound meet. It is important to keep the hook away from the capsule or it will rupture.

Dr. Faith asked if in the combined extraction it is not uncommon for two raw surfaces to adhere and to have entanglements of the iris to the posterior surface of the cornea. Dr. Ware used to do a preliminary iridectomy on all cataract

cases and there was never any entanglement of the iris. The iris healed quickly and there were not two raw surfaces to come together, as in the combined extraction.

Dr. Snydacker said that it seemed to him that in the cases reported to-night the average visual acuity was not very great. Is that usual in these cases?

Dr. Greene said he believed in preliminary iridectomy. If this was done in every case we would have greater success. Of course, the eyeball is opened twice and few patients will consent to two operations, which is the point to be considered.

As to the visual acuity, the results reported to-night are by no means typical. Last year Dr. Green reported seventy-five cases at the American Medical Association, and in most of the cases Drs. Wood and Jackson found better vision than was reported. These cases are being judged at the end of thirty days. Practically all the conditions seen immediately after the operation disappear within a very short time. By delivering the lens by the Smith operation there is in certain cases an attachment between the posterior capsule and the anterior layers of the hyaloid. Where you do not open the capsule you do not have the iritis that you have when you open the capsule. WILLIS O. NANCE, Secretary.

CHICAGO MEDICAL SOCIETY.

THE PHYSICIAN A MORAL EDUCATOR.*

G. H. VAN DYKE, M.D., CHICAGO

The Hippocratic oath has long since ceased, and with it the physician's prestige as a man of social influence. In earlier times, the man of science was also a man of culture, but to-day, in the division of labor, the scientific man is one thing and morals are relegated to another specialist, the clergyman.

That the physician is, and by rights should be, a scientific teacher and is best fitted to dispense a certain line of scientific thought, is admitted by all. He is looked to as the guardian of physical good, the corrector of hygienic error and the preserver of the public weal. Nor are those who so look upon the physician often disappointed. Indeed, that the physician has done much more for the common good of man than has any other class of specialists is not to be denied. Why, then, is the physician not held in respect, equal, at least, to those whose lines of activity also come within the same sphere, but who are acknowledged by common consent to have done and to be doing less than he? Is there not some reason, lying perhaps close to our own door, for this highly undesirable and unnecessary condition?

To individual and public alike the physician is usually ready to advise against things of a physical or tangible nature, of a pernicious influence. Why should he fold his hands when moral, immoral or even religious questions and conditions are brought to his notice in a given case, that are assuredly the cause of disease, even indirectly, and content himself with the thought that the other specialist should get busy, too?

No one knows so well as the physician the real cause, other than germs, of many of the physical ailments. Then why not "magnify the office?" Why should the physician not do his *full* duty toward those who consult him? To the patient whose mental or physical habit is the real cause of the disease, can the physician feel that he has done his full duty when he has provided him with an intelligent prescription, but has not spoken in clear tones against the cause of his ailment? He would do so if it pertained to some contagion; why not equally when some habit of lust? Why not speak against any form of evil which brings a patient to the office seeking relief? Perhaps the physician's own moral sense is not as keen as it should be.

The one great reason why the physician's prestige is such a beggarly quantity is the fact that his own life is not the pure, clean life that is expected by the

---

* Read before the West Side Branch of the Chicago Medical Society, Oct. 21 1909.

public, and which the public has a right to expect from the men who know things. "Thou that sayest do not steal, dost thou steal? Thou that sayest do not commit adultery, dost thou commit sacrilege?" Is it not a fact that the physician has lowered himself by indulging in the commonplace habits, from mere commonplace sins to the grossest crimes of the whole catalogue? He, with the brute, has run the gauntlet. Every crime that the low, dumb, brutish crook has committed has been indulged in by men of the medical profession. If proof of this statement is desired, I cite you to the criminal records of the state, any state in which you may happen to live. You will see that the physician is by no means free from criminal conduct. In questions where his profession touches the social and moral status of the community, notice the apathy and utter disregard and lack of interest; also the disregard and dogged indifference in vital statistical reports.

Is the public unfair in not dividing with us a larger share of honor and trust? Is it not giving us our full due? Why should it be otherwise than fair? Is it in the face of the fact that we, as a class of public specialists have made ourselves worthy of unqualified professional confidence that the public has arbitrarily withheld it from us? When we do as the charlatan does we must expect the charlatan's reward. When we belittle ourselves by defaming each other before the laity, we can neither ask nor expect its unreserved confidence. We must expect the absolutely inevitable: to "reap what we sow." When we do not and cannot look our young men and young women patients in the face and, with a tone that tells, admonish them against a habit or life of sin which brings the diseases upon them for which they seek our office and counsel, but find ourselves befouled by the same vice, habit or crime, are we any better than they? Simply because we have a smattering of scientific training is not sufficient in the mind of the public to cause it to admire the medical profession as such. Our lives are measured by the same great measuring rule that is universally applied, "by their fruits ye shall know them." After all, it is what is in the *life*, rather than in the head that counts.

The remedy is clear and certain: a life irreproachable and well abreast of the best lives in the community, a character strong enough to resist the temptations to sin, which are placed in the way by weaker and less responsible lives. Undaunted and yet unobtrusive rightness is the remedy. Could not something be done to infuse such an ambition into the hearts of the young men and women who are seeking the profession, that would, at least, partially correct the only too evident state of morals, or lack of morals, among physicians? Or shall we close our eyes against this condition and look only for germs? If so, what is the justification of such a course?

There are two places, it seems to me, where good and effective work could be done, which would have a wholesome influence: 1. The necessity of the physician's living a dignified and responsible life should be taught with effect under the head of ethics in, at least, the senior year of every college course. This subject should receive the same conscientious attention as that of any other subject of the course. 2. State boards should exercise their powers more freely by revoking the licenses of those who deliberately and repeatedly lower the profession by living immoral lives or committing acts of crime.

With no desire to appear either a pessimist or a calamity howler, it seems to me imperative that some recognition be given to the fact that reform measures are indispensable to the best interests of our profession. It is very commendable that leaders of education among us are insisting upon better preparation for entering the medical college and a higher grade of medical education on leaving it; but unless the moral standard is raised also, professional retrogression will inevitably continue. *The insatiable thirst for gain and an increasing tendency to avoid responsibility are two dominant mental states to be deprecated.*

"Ill fares the land,
To hastening ills a prey,
Where wealth accumulates
And men decay."

Let rascality, inebriety, law-violation and open and flagrant quackery be sifted out. So long as the practitioner, apparently in good standing, continues to deceive his patients purposely and ingeniously, so long will the public look with a certain amount of distrust upon the profession. The patient justly looks for as much integrity in the man who holds his life and health in his hands as in his banker; perhaps more. And just in proportion as it is found wanting in that proportion will some other cult gain ascendancy. No better reason than this can be found for the existence of the numberless religious cults.

Let the ethics of the profession be given their deserved place in the interests of the student and let their violation on the part of the practitioner be punished by excommunication, and our profession will be raised to a dignity and influence that will be both ennobling and gratifying.

1525 Hastings Street.

STAMMERING AND ITS TREATMENT.*

G. Hudson Makuen, Philadelphia.

(Abstract.)

Dr. G. Hudson Makuen in the above paper spoke of the importance of oral expression as a factor in mental and physical development, and the unfortunate consequences which must attend those who are not in possession of the free use of the faculty of speech. Of all the ills to which humanity is heir, there is probably none of like character that entails so much anguish of spirit and tends so much to warp the personality as stammering, and yet scientific men everywhere, educators and physicians alike, are inclined to regard the affection with comparative indifference if not with actual levity. "Come," says Tupper, "and I will show you an affliction unnumbered among the world's sorrows," and yet we as physicians and teachers are inclined to make light of the affliction and even to laugh at the awkward plight of stammerers.

Our standards of normal speech are too low. If they were as high as they should be, more children would be given special speech training. Stammering is largely a product of our modern civilization. It is a social evil. It is one of the results of an unfortunate heritage, fostered by an inadequate and one-sided education. Artistic physical training with us has been much neglected, and we would do well to study the methods of the ancient Greeks and of the Latins or of the more modern Japanese, who are masters of the fine art of physical development.

The phenomena of stammering are characterized chiefly by spasmodic contractions of the speech muscles, and the resultant unnecessary and oftentimes ludicrous movements of other related organs, and they are due to excessive, misdirected and uncontrolled nerve energy which having aroused the speech organs to the limit of their excitability, often overflows into neighboring channels and causes movements of the head, arms and legs and sometimes affects the heart, stomach and other internal organs.

Speech has been defined as articulated voice, and voice as the material of which speech is made. Voice is defined as being a moving column of breath set in vibration by its own impact with the vocal bands and reinforced by its diffusion through the various resonance chambers into the surrounding atmosphere. There are two essentials, therefore, to voice production. First, the moving column of breath, and second, its conversion into sound waves, the results of which we call voice. Speech is the moulding or the articulation of voice into characters or symbols which by common consent are recognized as being representatives of thoughts and ideas.

The production of voice precedes the development of the faculty of speech. Speech development and mental development take place simultaneously, the one stimulating the other. When the mental faculties begin to operate the desire

* Read by invitation before the Chicago Medical Society, April 6, 1910.

for expression arises, and it is in this desire for expression that the necessary innervations have their origin.

Normal speech is largely automatic and independent of any conscious effort. When a defect of speech arises, therefore, the patient is wholly unable to correct it without some outside assistance.

The primary and principal speech centers are the auditory and the glosso-kinesthetic centers, the visual and chiro-kinesthetic centers being employed chiefly in writing. In the auditory center are stored the images of words as they are heard, and in the glosso-kinesthetic center are stored the memories of the various complicated muscle movements and coordinations of the peripheral mechanisms employed in the processes of speech.

When a person speaks spontaneously the cerebral processes are somewhat as follows: (1) Ideas are aroused; (2) from the mental operations conducted with the help of these ideas a resultant product issues; (3) the product is clothed in words; (4) the central innervations necessary for their externalization are brought about; and finally (5) these innervations are conducted to the peripheral organs of speech in their proper order and intensity.

In the acute stage of stammering, the child experiences his difficulties chiefly in the nervous mechanism through which the innervations are carried to the peripheral organs. The disability in this mechanism may be congenital or it may be acquired. As the stammering progresses, the innervations themselves become disturbed, the clothing of the product in words is also interrupted, and there follows a confusion of the ideas which form the basis of the mental product. There is a continuous contest going on between the will or desire to speak and fear as to the results. The contest is oftentimes an unequal one because the fear is so great as to lead to a veritable nerve panic which completely paralyzes all concentrated effort.

The causes of stammering are two-fold, predisposing and exciting. The predisposing or ultimate cause of stammering is inherited and congenital. It consists of an irritable or hyperesthetic condition of the psycho-motor mechanism, and the child possessing it may be said to have a predisposition or tendency to stammer. This condition manifests itself at the very beginning of the developmental speech period in the second year, and it is characterized by the various forms of speech difficulties, such as tardy development and a general inaptitude toward vocal and articulatory efforts. This is what I have called the first or prodromal stage of stammering.

The exciting or immediate cause of stammering may be any one or more of many different things which are usually accidental and environmental. The various nervous diseases of childhood have been known to result in stammering in those who are predisposed to the affection, and nervous shocks resulting from accidents and injuries are frequently the forerunner of stammering. One of the most fruitful exciting causes of the affection, however, is a lack of the right kind of speech training during early childhood. The popular belief that the development of speech will take care of itself and the plentiful lack of knowledge on the part of the parent and teacher as to the amount and kind of assistance that many children require; the tendency for instance to ignore their errors of speech or even to laugh at them and to encourage "baby talk" because it happens to appear to them, forsooth, to be "cute," are all detrimental to the future speech of the child and they frequently result in stammering and other forms of faulty speech habits.

The ultimate cause of stammering, therefore, is more physical, while the proximate cause is more mental. The former consists in a weakness or a functional disability of the efferent nerves of speech and the latter in faulty innervations arising from resultant disordered intellectual and emotional states of mind.

The treatment of stammering should be divested of all mystery and secrecy, and it should be simple, direct and physiologic. It should aim to supplant faulty habits of speech with correct ones, and it should begin with the removal of all obstacles to normal speech whether they be found in the peripheral or

central mechanisms. Bad moral, mental and physical habits should be replaced by good ones. There should be instituted a systematic course of ethical, mental and physical culture, which shall have for its object the general development of the individual patient. An ear for good speech must be cultivated just as the practical musician must cultivate an ear for music. The child is always blissfully unconscious of his stammering until his attention is called to it by his parents or teacher.

In considering the treatment of stammering, three stages of the affection should be recognized, namely, the prodromal, the acute and the chronic. In the first and second stages the treatment is largely preventative but in the third stage, after the habit has been once formed, it consists in a complete reorganization of the speech habits.

Those in the first stage and sometimes also those in the second may be successfully treated by intelligent teachers in the schools, but the real stammerers of the third stage require expert treatment of the highest order, and I know of no disease which so taxes the skill and ingenuity of the physician as does the combination of nervous derangements which accompany stammering.

Mental culture, voice culture and speech culture must form the basis of every rational method of treatment. The stammerer must acquire a high degree of vocal power and the greatest possible articulatory skill and efficiency if he would overcome his difficulties. He must learn to play upon his own vocal organs somewhat as the pianist learns to play upon the piano, and he must learn to be his own teacher. He must bring all the processes of speech within the domain of his own consciousness, and he must control them entirely by volitional effort. He must know that he can control his speech and he must know that he knows that he can do it.

The four important things for him to be trained in are respiration, phonation, articulation and mentalization, and the object of the training should not be primarily to cure stammering but rather to develop a good voice, facility of articulation and the right mental attitude. This kind of training necessarily presupposes extraordinary tact and skill on the part of the teacher and physician, and persistent cooperation on the part of the patient.

WHY DOES THE GENERAL PRACTITIONER NOT ATTEND THE MEETINGS? *

JOHN J. STOLL, M.D.
CHICAGO, ILL.

When this West Side Branch was started, it was proclaimed as the Practitioners' Club. Here in this environment of colleges and hospitals and the greatest possible field for general practice, there should be gathered the greatest attendance of medical men, that it would be possible to gather anywhere. The original object was to bring all of these elements together in Cook County Hospital, as one harmonious gathering. The usual factional feeling soon arose and many of my fellow-practitioners have openly remarked that I might as well quit now as later on, because the general practitioner was not wanted here for any other purpose than to listen to the tutors, college men and ex-interns. There is no use to get on the outside and kick. The only way to fight is to stay right here and have it out. I have stood by the society through thick and thin from the beginning, and why I should be the first one to be turned down and snubbed by the program committee is only the irony of fate. My place on the program dates from the last meeting last year, and there never has been another case where the member was not extended the courtesy of reading his paper at the next meeting. I am here to-night only because of kicking and howling every month for my rights and have not begun to fight, yet say nothing about giving up to any crowd of silk stockings. There used to be a regular attendance of general practitioners here and they fixed the date of meeting on Thursday nights. Last

* Read before West Side Branch of Chicago Medical Society, June 13, 1910.

fall the day was changed to Monday because a card game on Thursday night outweighed any consideration for the general practitioner. We know we are not wanted here for anything else but to listen, to admire and to be a lamb. The mode of bringing men together, the mode of governing them and the mode of controlling them is a farce. The main reason why there is not more attraction here for the average man is because there is nothing to show that the conditions for general practice will ever be any better. There is no advantage of any kind whatever for a general practitioner to come here or belong here, for one class is doing all the ruling and reaping all the benefits. By that I do not mean to excuse any one for keeping away. There should and must be a way of controlling men locally and not by state law. As it is now, a man is just as independent, just as free and just as well protected outside of the fold as inside. The fact is that, as an organization, we amount to nothing. The advertised idea, that membership is of any help or is the slightest barrier against the malpractice fiend, has been found to be a frost. The fact that such a thing as an insurance against malpractice can exist and be paid for out of one's hard earnings is a terrible black mark against us as an organization and a still worse mark for an allied profession. Periodically or spasmodically a sort of reform wave alights in our midst and long-forgotten things are rehashed for a while to hide something more important. When the powers that be are through shaking the old red rag of dispensary evil and contract practice in our faces, they have usually helped themselves to something else desirable to themselves. Any person who has no more self-respect than to mingle with what rightly belongs to a dispensary is welcome to their choice. They are not desirable clientage. Contract practice is only an evil when some minor light takes a fat railroad or factory job away from someone else. Of all the mass of fine papers and interesting cases presented here, very few attracted the general practitioner, because they are cases he rarely encounters. It is just like reading a certain high class journal, which has about one article in five (5) years of any value to a man in general practice. If you will admit that you are trying to eliminate us entirely and force everybody to go to a hospital, then you can start a new issue. Instead of the usual routine, "The patient was removed to the hospital and operated," you must get used to saying, "Professor Knowitall was called in and took charge of the case." You want us to come here and listen and to look at you operate. If one of us attempted any of these operations you would condemn us. That is why your presentations are a farce. The man alone, the man removed from our environment, the man dependent upon his own thinkcap has no hospital accommodation, no trained assistants and no trained nurses to arrange and help at every turn. He must even make his own diagnosis and he cannot afford the luxury of an assistant or head intern to write death certificates for him. Neither the office nor the bedside technic of caring for your patient is learned from your teacher. Neither is the average teacher a shining light, as an illustrator of medical ethics. Once upon a time a young M.D. had on his staff a pair of twin patients. They gave him a great many uneasy hours and he urged the family to call in a great man on children's diseases. The family said they had experienced fatalities such as this before, and they could see no advantage in a consultation. The M.D. told them that there were a great many earnest workers in hospitals and laboratories who were progressing along these lines and it would be advisable to call in the best man in this line. One child died and the other lingered along. One morning early the phone rang and the father of the children said: "Doctor, you need not call at our house again; we called in your professor and he has taken charge of the case." The wrathful youth accosted his former idol and wanted to have the ethics of such action explained. "Why, my dear man, if people want me, I am going. You can't prevent people from wanting me."

A few years later he read the announcement that he could attend confinement cases at a well-equipped hospital and have as complete charge as though he belonged to the staff. He immediately made all arrangements for a case and one night, when not even a promiscuously active mosquito troubled his peaceful slumbers, his patient was delivered by one on the staff because he could not be

reached by telephone. Of course, the wicked telephone girl was to blame for that. He referred an interesting case to a specialist. The patient came back and reported that the diagnosis and line of proposed treatment had been concurred in, but he was advised to come back to the eminent man at least once a week, because he could be better cared for. A surgical friend of his took a case to a hospital a few days previous to a proposed operation. While there the patient was told that if a member of the staff performed that operation there would be no extra fee, outside of the hospital charges. The patient was advised to leave the hospital, under pretext of having deferred the operation to a future date, then come back and be operated on by a member of the staff. The maneuver was precisely executed. Another man, whose ethical ideas were clean and who lived up to his pretensions, referred all of his hospital cases to a way-up man. After numerous encounters in the operating room with a fellow-practitioner, he was told one day that his commissions must amount to quite a little. The poor unsophisticated chump said: "Why, that man would not pay any commission." Another idol went to the scrap heap when he was shown a tell-tale check for commission. Business is business and hypocrisy has never been rightly classified. A man to do surgical work needs special training and should limit himself to that class of work. If he was treated fairly he could easily work up a good line and be able to split an equable fee with men who kept him busy in his line. People are blindly and wrongly willing to pay larger fees for surgical work than they are for just as great skill in other lines. The young man starts with the best of intentions, but when he wakes up to the fact that his main competitor is a silk stocking, who poses as an internal-medicine man, he soon does like the rest and makes a grab for everything in sight or out of sight. He invades the obstetric line. Nice little fee, sure we will take that along." He will smilingly repair a lacerated perineum after a forceps or other delivery, play nurse and chambermaid, pocket the staid old hoodo of a $15 fee. The same man will come back to amputate an elongated prepuce, call that surgery and pocket $25. Reading scientific papers will never correct these and allied evils. One patient had a succession of serious diseases followed by a costal necrosis. Entering the house one day, the medical attendant was told that the medical student living next door who had been allowed to come in and keep track of the entire case had brought in his professor. This professor brought along his halo, scraped a little necrotic bone and saved the patient. A case of pneumonia went a similar route. "Why, doctor, when you said pneumonia, my sister, who is a trained nurse, went right out and got her professor." How much you dare pose for newspaper notoriety depends upon who you are.

Periodically, there is a splurge made about abortions. The general practitioner knows that the class of people who demand the services of an abortionist are seldom reached by him. There is a cold-blooded business side to this question. That means that there is a law of demand and supply. Were there no demand for an abortionist, there would be none. Some four years ago a teacher in one of our medical institutions called me up and said: "Doctor, can you come right over here and do a laparotomy for me?" He said to me: "Doctor, there must be a pint or more of creolin solution in the abdominal cavity." I told him if there was he knew how it got there. Less than two months ago that same man could not be coaxed to cut short his office hour and come out to a consultation for $25 cash. He has not advertised for these women. He sells them the latest contrivances to prevent conception, but if they make a mistake and still conceive, they may possibly know where to get relief. One woman who had three babies in three and one-half years of married life said to me: "Doctor, I don't see any of the rich people going to hell for getting rid of kids. Don't tell me they don't, for you know I am poor and do their washings. You can't fool me. They are carried to church and to the cemetery just the same as all the rest." There is another phase of this question. When you perform a life-saving curettement, that is surgical skill; when you get caught with a case of sepsis on hand, you are an abortionist. Not long ago, one of my patients had two babies ten months apart. The question to me amounts to this: Is there not some undiscovered truth under-

lying our sexual relations, the disclosure of which would do more real good in this world than anything that has been taught? It is the honest mothers, who wish to do what is right and yet want to protest that they are imposed upon, who really have a grievance. The question is not how to treat abortion. It is the same in this as it is with disease. We as medical men are dealing with results only. Why will women be so determined to abort that they will use catheters on themselves? It is because they do not know the *psychologic* consequences. I use the word psychologic purposely, because there is a new era dawning upon this earth, which will better a great many things. When you undertake to do better things, you can stop at nothing, not even an eagle-eyed program comit.

It is the general practitioner who comes in contact with petty and arbitrary rules of the health department, which produces no result excepting to impose hardships upon the general practitioner and upon poor people. Such things are never discussed here, where they belong. How many of you know about this ordinance?

DEPARTMENT OF HEALTH, CHICAGO.

An ordinance passed by the City Council Nov. 1, 1909, required all persons, firms or corporations to report to the Commissioner of Health within twenty-four hours any sale or gift of diphtheria antitoxin within the City of Chicago, giving the information indicated below.

FILL OUT AND MAIL THIS CARD.

These cards were sent to the drug stores, I imagine, to try and find out where all the antitoxin goes to. The various health departments should furnish a similar card to the marriage license clerks. After duly getting names and addresses of the contracting parties, have them declare to this: Are you intending to have children or not? If yes, who will be your obstetrician? If no, who will be your specialist? In some such manner, this great commonwealth might be able to formulate an adequate law on vital statistics. Vital statistics and the matter of paying a man for recording cases does not concern the silk stockings at all, because there is nothing in it for them. All the advance that has been made is directly in line for our rulers. They have a magnificent field for advertising themselves, and not even these branch societies are open to a general practitioner who might have something new. The state laws that have been enacted have not and do not restrain the quack nor the advertiser. They restrain you and me. We are respected and honored citizens by territorial limitation only. One by one the homeos, eclectics and osteos have been legalized. If the various healers and christian scientists will be careful and open a lucrative field of consultations for our silk stockings, they will also surely gain state recognition. A National Department of Health would merely further the ambition of our medical politicians and be of no practical value to the general practitioner. It would not be instituted for anything but political aggrandizement as long as our organization is run on the lines that it is run on at present.

This pretext of an organization has no voice in anything pertaining to medicine. The department of health is a one-man power, making laws out of individual opinions. They undoubtedly have the legal power to lock up a lot of healthy children with one afflicted with contagious disease in our unhealthy flats, but I doubt the justice of it. There is no moral right in depriving a child of fresh air and liberty and confining it with a contagious disease. Scarlet fever, measles and diphtheria are just as prevalent as ever in their periodic appearance, because you have not found out what causes them.

There is no doubt but that an institution like this County Hospital should be under the supervision of medical men. There is still less doubt about your geting fairer treatment from the layman who runs it than you do from the medical men inside of it. There is no fairness among us just because there is no power in our sham of an organization to regulate anything. The ex-interns of this hospital can stand together and hammer the general practitioner all they wish, because they are akin to our silk stockings, and secondly because they are prob-

ably better organized than we are. The primary object of education should be to teach every man to do his own thinking. The primary object of education to-day is to properly coach a man for a diploma and his prospective state license. If he loses his own thinkcap, he must always remember to call his own professor in consultation. Of the possible 3,800 members in this city, 2,000 belong to the county society. Of the possible 450 attendants here, there never were one-third present. There is a reason for this. My reason is that you cannot better the conditions for the general practitioner by reading scientific papers to him. Just one practical every-day illustration. The druggists of this city are treating more cases of venereal disease than are the doctors. Suppose that this branch of the county society would ask these men in all fairness to quit that practice. They would take no notice whatever, and as in everything else, nobody cares for anything that might help the general practitioner. Why this multitude of medical colleges with all sorts of output? First legalize them, then penalize them to a sliding scale of perfection?

The multiplicity of medical colleges is foisted upon the all-tolerant public, just as is the multiplicity of churches. The initiative and referendum rightly applied is the only remedy for both of these evils. One man said to me that the general practitioner does not come here, because there is not a dollar in sight for him. This view is left for your own consideration.

I have presented my view of the case and am sorry that the general practitioner is not represented by a better and abler orator.

CUMBERLAND COUNTY.

At the regular June meeting of the Cumberland County Medical Society the following officers were elected for the ensuing year: R. L. Kurtz, Neoga, President; R. F. Stephens, Toledo, Vice-President; C. J. Hancock, Greenup, Secretary-Treasurer; S. E. Bigler, Neoga, Delegate; J. F. Adams, Hazel Dell, Medico-Legal Commissioner.

EFFINGHAM COUNTY.

The regular monthly meeting of the County Medical Society was held at the Courthouse at 2 p. m., President P. I. Cromwell presiding. Members present were Cromwell, Bing, Taphorn, Burkhardt, Buckmaster, Damron, F. W. Goodell, Haumesser, Holson, J. B. Walker and Dunn. Visiting were: J. W. Hamilton, Mt. Vernon; Philip Kimerly, Neoga; George S. Rainey, Salem; W. K. Newcomb, Champaign; S. A. Kuhns, Watson; George Hohman, Laclede; W. E. Frank, Newton; Mrs. E. Robb, Newton; F. W. Schroeder, Strassburg; A. R. Kieffer, St. Louis, Mo. Very interesting papers were read by the following members: J. B. Walker, "Diagnosis and Treatment of General Diseases of Stomach." Discussed by Drs. Akester, Newcomb, F. M. Goodell, Haumesser and W. L. Goodell. C. F. Burkhard, "Acute Gastritis." Discussed by Drs. F. W. Goodell, J. B. Walker, Kieffer and Rainey. G. H. Haumesser, "Ulcers of the Stomach." Discussed by Drs. Hamilton, Holson and Newcomb. F. Buckmaster, "Diagnosis and Surgical Treatment of Diseases of the Stomach." W. K. Newcomb then addressed the meeting. Subject, "Medical Organization." The meeting then adjourned to the Pacific Hotel, where an elegant banquet was enjoyed by the doctors and their wives at 7:30 p. m.

H. TAPHORN, Secretary.

FULTON COUNTY.

The fifty-second meeting of the Fulton County Medical Society was called to order by Vice-President Coleman in the Churchill House parlors, Canton, July 5, 1910, at 2 p. m.

Minutes of previous meetings were read and approved. Applications for membership from Drs. N. W. Miller and J. W. Welch were read. In the absence of

the membership committee, Dr. Shallenberger moved that the chair appoint a committee *pro tem.* Carried. The chair appointed Drs. Shallenberger, Beaty and Oren as such committee. Shallenberger moved a suspension of the rules and that the membership committee report at this meeting on the applications of Drs. Crone, Miller and Welch. Drs. Stoops and Beaty moved the chair appoint a committee of three to draft resolutions of respect for Dr. J. E. Sutton and regrets at the loss of his companionship caused by his permanent removal to Washington, where he retires from practice and makes his home with his only son. Carried, and the chair appointed Drs. Stoops, Reagen and Nellis as such committee. The Membership Committee reported favorably on the applications of Drs. Crone, Miller and Welch. Shallenberger moved adoption of the committee's report, and that the secretary cast the vote of those present in favor of the election to membership in the society of Dr. Crone, of Canton, Drs. Miller and Welch, both of Cuba. Carried. The secretary cast ten ballots and the chair declared the applicants elected.

Dr. Beaty, the only member on the program present, read his paper on "Drugs Acting on the Blood, Heart and Blood-Vessels." General discussion followed. Dr. Coleman presented a case of ulceration of the arm.

Dr. Allison moved the chair appoint a committee of two, including the secretary, to prepare a program for the annual meeting, and a committee of three on arrangements for the annual meeting, and a committee to personally canvass the county previous to the annual meeting. Carried. Dr. Allison and the secretary were appointed as program committee. Dr. Scholes, Kirby and Chapin were appointed committee on arrangements, and Drs. W. D. Nelson, Jr., was the committee to arrange to canvass the county.

Those present were Drs. Coleman, Beatty, Shallenberger, Oren, Stoops, Putman, Miller, Standard, W. D. Nelson, Jr., Seymour Nelson, Roberts, Parks, Scholes and Allison.

D. S. RAY, Secretary.

At a regular meeting of the Fulton County Medical Society, held in Canton, Ill., on July 7, 1910, the following resolutions were adopted:

WHEREAS, Our fellow physician and friend, Dr. J. E. Sutton, the first President of this Society, and forty years a resident of Canton, has left to take up his residence in another state; therefore, be it

Resolved, That we greatly regret to lose from our community a man who has always preeminently exemplified, in his civic and professional life, both the virtues and characteristics of a good citizen, and the high attainments of an able physician. That we are keenly conscious of the fact that the loss of such a man, whose life was always in the right and whose professional services will be missed by a great host of friends and patrons, cannot easily be replaced. That his influence, always exerted both as a citizen and physician in the cause of justice and humanity, cannot soon be lost, but will continue to act and be felt by the community for years to come, and more so by his professional associates with whom he dwelt in harmony and peace. That it is our sincere and heartfelt wish that he may live and enjoy many years of comport and happiness.

P. H. STOOP, M.D.,
E. W. REAGAN, M.D.,
J. M. NELLES, M.D.,
Committee.

D. S. RAY, Secretary.

KNOX COUNTY.

The seventeenth annual meeting of the Knox County Medical Society met at Galesburg, at the county court house, on April 21, with President Dr. J. E. Cowan in the chair. The following were present at the meeting: Drs. Baird, Birmingham, Bohan, Bower, Bradley, Bryant, Chalmers, Cowan, Cox, Evans, Ewing, Finley, Franing, Hall, Hanawalt, Hertig, Horrell, Johnson, Longbrake, McClanahan, Maley, Matheny, Nash, Percy, Ripley, Ryan, Stotts, Galesburg; Beecher, Gilson; Bellwood, M. W. Bisson, C. F. Bradway, E. H. Bradway, Abingdon; Browning, Hermon; Cole, Williamsfield; Davis, Avon; Giles, Knoxville; Knowles and Walker, Maquon; Parker, Yates City; Stewart, Oneida. Visitors: Drs. J. Raw-

son Pennington and Van Pelt, Chicago; J. A. Egan, Secretary of the State Board of Health, Springfield; Waterous, Galva; Holliday, Patton, Stocks, Lindorf and Wells, Monmouth; Zimmerman, Cameron; Betts, Prairie City; Duntley, Bushnell; Bacon, Macomb; Opre, Victoria. The morning session consisted of the business meeting, the reading of communications, reports of officers and committees, and the election of officers. The applications of Drs. R. F. Karney, Galesburg, and H. E. Opre, Victoria, were received and after favorable action by the board of censors both were unanimously elected to membership in the society.

Officers were elected for the ensuing year as follows: For president, Dr. E. E. Davis, Avon; for vice-president, Dr. D. J. Evans, Galesburg; for delegate to the State Medical Society, Dr. W. O'R. Bradley, Galesburg; for alternate delegate, Dr. L. Becker, Knoxville; for censor, Dr. L. R. Ryan, Galesburg; for secretary-treasurer, Dr. G. S. Bower, Galesburg.

The afternoon was taken up with the following: "Psychotherapy and Its Relation to Medicine and the Ministry," Dr. W. S. McClanahan, Galesburg. This paper was on a subject which to a great extent is neglected by physicians in the treatment of their cases and, as the Doctor stated, has driven many patients into the hands of quackery.

The second paper was on "Dysmenorrhea," by Dr. J. E. D. Silcox, Rio. The Doctor was unable to be present but was kind enough to send his paper and the same was read by Dr. F. G. Hall, Galesburg. This was a very good paper, treating as it did of a not uncommon ailment and was greatly appreciated by all present.

The third paper was on "The Pain from Gastric Ulcer from a Diagnostic Standpoint," Dr. Fred Ewing, Galesburg. This paper was thoroughly appreciated as the differential diagnosis, by modern methods, of the pain in gastric ulcer was treated in a very able manner.

The next was a lecture on "Fistula," Dr. J. Rawson Pennington, Chicago. By the aid of charts and a blackboard the lecture was made very interesting and instructive. Dr. Pennington was tendered a vote of thanks for coming to Galesburg and appearing before the society.

The next was an address by Dr. J. A. Egan, Secretary of the State Board of Health, Springfield. Dr. Egan spoke on the state medical laws, statics with regard to examinations, reciprocity, sanitary inspection, the free distribution of diphtheria antitoxin, and the regulation of medical colleges. At the close of his address Dr. Egan was given a vote of thanks for coming to Galesburg.

At 6:30 o'clock the members of the Knox County Medical Society, with the ladies and invited guests, enjoyed a banquet at the Elks' new home, after which the seriousness of the day's meeting was laid aside and a pleasing program of a lighter vein was rendered.

D. J. EVANS, Secretary.

LAKE COUNTY.

The meeting of the Lake County Medical Society was held June 23, 1910, in the dining room of the Congregational Church, Waukegan, Ill. The Kenosha County (Wis.) Medical Society, to the number of twenty, were the guests of the Lake County Medical Society at this meeting. Following a dainty luncheon served by the ladies of the Congregational Church, Dr. A. E. Halstead, of Chicago, read a most excellent paper on "Ulcer of the Duodenum." This was discussed by Drs. Adams and Gephart, of Kenosha, and Drs. Foley and Gavin of Waukegan. A motion to extend a vote of thanks to Dr. Halstead received the unanimous support of both societies. After this Dr. Halstead was compelled to leave the meeting because of other engagements. We then proceeded with the election of officers. The following were elected: Dr. Martin E. Fuller, of Wauconda, was elected president; Dr. J. M. Palmer, of Grayslake, vice-president, and Dr. W. H. Watterson secretary and treasurer. Drs. Theodore S. Proxmire, Edward F.

Shaffer and Mary C. McClellan were then voted as members of the society after having received the sanction of the board of censors. Dr. Fuller was then appointed by the chairman as a member of the Almshouse Committee in place of Dr. Elva Wright, resigned.

The regular program of the evening was then given. Dr. E. Ford Gavin, of Waukegan, gave a most thorough paper on the subject of "Otitis Media." Dr. W. S. Bellows, of Waukegan, gave an excellent paper on "Intestinal Obstruction," which showed great work in preparation as well as record of personal investigation and research. Dr. O. M. Steffenson, of Chicago, in place of reading his paper on "Diffuse Suppurative Peritonitis," owing to the extreme heat of the evening and the lateness of the hour, gave a summary of his paper. Dr. L. H. Tombaugh was then appointed by the newly elected president as medico-legal member of the State Medical Society from Lake County. A vote of thanks was then extended to the society for their papers, to the Kenosha County Medical Society and for their presence which so encouraged the local society in their work. The meeting then adjourned.

W. H. WATTERSON, Secretary.

ROCK ISLAND COUNTY.

The Rock Island County Medical Society dispensed with its regular June meeting, and in its stead there was held the Second Annual "Harmony" (Get-Together Dinner) of the medical society and the Rock Island Retail Druggists' Association, Friday evening, May 27, at the Moline Club, Moline, Ill. After dining, Toastmaster Dr. F. H. First, of Rock Island, introduced Hon. William A. Meese, of Moline, who spoke on "The Doctor, the Druggist and the Law." Then followed Dr. H. B. Hemenway of Evanston, whose topic was "Old and New Ideas in Medicine and Pharmacy." The Criterion orchestra furnished music for the evening and a flashlight group picture was taken. About sixty physicians and druggists were in attendance.

ALBERT N. MUELLER, Secretary.

ST. CLAIR COUNTY.

The regular quarterly meeting of the St. Clair County Medical Society was held July 7, 1910, at Priesters Park, Ill. President Hilgard in the chair. Members present were: Drs. Hilgard, Hansing, Ostrich, J. W. Twitchell, Wiggins, Duey, Lippert, Sloy, Miller, Fairbrother, Lane and Dr. Dissell, of Millstadt.

Minutes of previous meeting read and approved. On invitation ex-President Wiggins of our State Society gave a general account of the Danville meeting, and of his impressions relative to the needs of the medical profession in our state, gleaned during his year of incumbency. He called attention to our neglect in not adopting means which have proved efficient in organizations in other departments of human activity, and prophesied that before the medical profession could obtain proper recognition and effectually resist its improper exploiting by individuals, corporations or the government, it would have to place its affairs in the keeping of permanent paid officers.

He called attention likewise to conditions now existing in Europe where fees in many instances, ranged from $2.50 to 25 cents per visit, and where only those exceptionally favored in the profession were accorded recognition, or secured financial returns commensurate with their work or worth. He stated that already in this country in some of the eastern states the fees paid the general practitioner are so low as to seriously affect his livelihood, and by reason thereof effort toward higher scientific attainment is discouraged, that while primarily the profession would suffer, in the end the average community which must of necessity depend upon the general practitioner in its hour of need, would suffer, without resource.

Following Dr. Wiggins' talk, discussion by several members present.

Dr. Fairbrother made the following motion which was promptly seconded:

Resolved, By the St. Clair County Medical Society, that we as a society recommend that the office of president of the State Society be a salaried office, and be for a term of four years.

The motion was unanimously carried.

There being no scientific paper, it being impossible for the essayist to attend, Dr. Wiggins made some remarks regarding Ludwig's angina, explaining rapidity of onset and extension, danger of procrastination in handling, necessity of early diagnosis, necessity of immediate action following diagnosis as disease runs only a short course, and unless followed by immediate surgical procedure the patient will not survive.

Following the discussion by Drs. Hilgard, Twitchell, Ostrich, Fairbrother and Skaggs, Dr. Fairbrother cited a number of cases from *Annals of Surgery*. Refreshments were then served, after which the Society adjourned to meet Oct. 6, 1910.

E. H. LANE, M.D., Secretary.

STEPHENSON COUNTY.

The summer meeting of the Stephenson County Medical Society was called to order at the Court House in Freeport on Thursday, July 14, 1910, by temporary chairman, Dr. D. C. L. Mease. The following answered to roll-call: Drs. Bobb, Clark, Hewetson, Hutchins, Linda K. Hutchins, W. A. Harlan, Karcher, Leavy, Mease, Peck, Stealy, Snyder, Rideout and Rosensteil. The following program, prepared by the president, was then given:

A Few Diagnostic and Therapeutic Points Picked Up Here and There. Dr. D. C. L. Mease. Medical Treatment for Gall Stones in Cases of Pregnancy. Dr. W. A. Hutchins. Mucous Catarrh of the Bowels. Dr. Mary L. Rosensteil. Dr. J. H. Stealy presented a clinical case before the society. A man, aged 47, American, white, a farmer, married. Family history negative, except that a sister died of cerebral tuberculosis (following tubercular peritonitis) a few months ago. However, this patient was not living in the same family with the sister. Personal history: Has had the common diseases incident to childhood. About six months ago patient complained of loss in weight, some pain in the left hypochondriac region, general inanition, loss of memory slightly noticeable to patient, occasionally nauseated but no vomiting. Occasional hemorrhages from the bowels. No fever, pulse normal. Blood examination revealed reds 2,800,000, whites 7,200. Malaria-plasmodia not present. No nucleated reds, no eosinophils. Whites consisted of about 50 per cent. lymphocytes. Hb. 70 per cent., color index approximately 1.2 per cent. Reds showed little poikilocytosis and on an average were a little large and moderately well staining. A very large spleen, reaching to pelvis. Diagnosis, splenic anemia.

Correspondence between the secretary and our representatives in Congress relative to senate bill 6049, as presented by Senator Owen, of Oklahoma, was read, and the Society was pleased to learn that those written to were of the opinion that the time was opportune for the establishment in the cabinet of the president, of a Department of Health.

The report from the committee appointed to wait on members of the library board was called for but there was no report to be made. The chair asked for some expression from the members on this question of the Society having a room in the library building. All favored the idea. Dr. Stealy informed us that had the Society proper rooms for a library he would make a subscription toward an endowment.

Dr. C. J. Leavy was voted an active member of the Society. No further business the meeting adjourned.

J. SHELDON CLARK, Secretary.

At a meeting of the Stephenson County Medical Society the following resolution was adopted: The Stephenson County Medical Society is again called upon to chronicle the death of one of its members, L. M. Currier, M.D., who died

Saturday morning, July 16, 1910. In his death we feel that the profession has lost one of the oldest and best known practitioners in the city of Freeport, a physician of more than ordinary intelligence and one who, through years of practice, endeared himself in the hearts of many of our older citizens. He at one time enjoyed a large clientele until within recent years, his health becoming impaired, he could no longer devote his entire attention to his professional duties. Although Dr. Currier was a sectarian in medicine, his mind was broad and well balanced and his personal views never entered into conflict with those of his fellow practitioners who differed from him in practice and theory, being always ready and willing to give or receive as the case might be. Therefore, be it

Resolved, That the sympathy of the Society be extended to his family and friends, and a copy given to each of the papers for publication, and also spread upon the minutes of this Society.

D. C. L. MEASE,
R. F. HAYES,
H. E. MORRISON.

Book Notices.

DISEASES OF THE GENITOURINARY ORGANS. By Edward L. Keyes, Jr., M.D., Ph.D., Clinical Professor of Genitourinary Surgery, New York Polyclinic Medical School; Surgeon to St. Vincent's Hospital; Lecturer on Surgery, Cornell University Medical School, etc.; 975 pages, with 4 colored plates and 195 other illustrations. D. Appleton & Co., New York and London, 1910. Cloth, $6 net.

Dr. Edward L. Keyes, Jr., grandson of Van Buren and the son of E. L. Keyes, both well known writers on genitourinary surgery, brings to his work intelligence and enthusiasm which bids fair to make him a modern edition of his distinguished ancestor. Certainly the volume under consideration is up to date and gives reliable information to the reader on the important subjects under consideration. More writers, too, on these diseases are making rapid changes and the books of even five years ago are not to be relied on. Our readers will not make a mistake in securing copies of Keyes' work.

AMERICAN PRACTICE OF SURGERY. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Editors Joseph D. Bryant, M.D., LL.D., Albert H. Buck, M.D., of New York City. Complete in eight volumes. Profusely illustrated. Volume VII. William Wood & Co., New York.

The system of American Surgery by Drs. Bryant and Buck is rapidly approaching completion and this volume is of particular interest to the medical men of Illinois because three of the important articles are contributed by Drs. Andrews, Harris and Ochsner of Chicago. The article by Dr. Andrews on Hernia is a classical exposition of that subject. Surgical diseases and wounds of the stomach and esophagus are considered by Dr. Ochsner in a 120-page contribution. Dr. Harris contributes an article on the diagnosis of tumors of the abdomen. The other articles are by well-known writers and are complete and as a usual thing up to date.

The article on the vermiform appendix by the late Dr. McCosh of New York City is probably the only exception. Dr. McCosh died December, 1908, and of course his article is only a statement of our knowledge up to that time. Since then important improvements, particularly in the treatment of diffuse suppurating appendicitis, have been made which would no doubt have been added to his article, had Dr. McCosh lived. The volume as a whole, however, maintains the high standard set by the other volumes and the whole series should be in the library of every professional man interested in surgery.

NEWS OF THE STATE

PERSONAL.

Dr. Pierson, of Taylorville, has removed to Pontiac.

Dr. Robert S. McCaughey, Hoopeston, is in Germany.

Dr. Benjamin H. Frayaer, Chicago, has left for Europe.

Dr. H. O. Collins has removed from Pana to Wichita, Kansas.

Dr. Matt Hill, of Taylorville, will remove to Winfield, Kansas.

Dr. W. T. Murray, of Springfield, has removed to Dayton, Ohio.

Dr. R. H. Garm, of Beardstown, has gone to Europe for post-graduate study.

Dr. and Mrs. Albert E. Mowry sailed from Montreal June 30, for Europe.

Dr. W. E. Miller, of Columbus, Ill., has been appointed county physician.

Dr. John W. Huston, Virginia, has gone to Asheville on account of his health.

Dr. Wakefield, of Springfield, will go to China as a medical missionary in September.

By the will of the late S. E. King, Ottawa, $40,000 has been left for a hospital in Ottawa.

Dr. F. B. Hoover has removed from Chicago to 502 Goodwin Institute, Memphis, Tenn.

Dr. Chas. C. Clement, assistant surgeon at Eye and Ear Infirmary, Chicago, sailed for Europe June 1.

Dr. and Mrs. Wm. O. Krohn have left for Europe by way of a motor trip through New England to Montreal.

Dr. W. H. Grayson, of Granite City, was overcome by heat while atending the Elks convention at Detroit, Mich.

Dr. C. K. Bates will return to Camp Point to resume his practice, after spending some time in Sweetwater, Wyoming.

Dr. H. H. Kleinpell, of Chicago, is spending the summer in New York Polyclinic. Dr. S. W. Forney, a recent intern of the Chicago Policlinic and Henrotin Memorial hospitals, is looking after his practice.

NEWS ITEMS.

—Dr. J. H. Huber, of Springfield, Ill., has bequeathed $50,000 to Pana, Ill., for the establishment of some benevolent institution.

—Work is to be begun on a new hospital at Monmouth. The new hospital will be modern in every respect. The new building will be erected at a total cost of $37,000.

—The following officers were elected at the last annual meeting of the Chicago Surgical Society: President, Jacob Frank; vice-president, Chas. Davison; secretary, Frederic A. Besley; treasurer, Dean Lewis.

—W. T. Stuart, M.D., has sold his residence on Douglas Boulevard and will take up his home on 1113 Pratt Boulevard, Rogers Park. The Doctor has also changed office from the ninth to the eighth floor of the Marshall Field Building.

—Dr. Carl Wagner and his daughter, Louise Wagner, of 1563 La Salle avenue and Dr. Paul Kreye, of 161 West North avenue, were bruised and cut when an electric runabout in which they were riding, was run into from behind by a speeding taxicab on Michigan avenue, near Hubbard place.

—Announcement was made July 1 of the establishment of the Otto S. A. Sprague Memorial Institute for the scientific investigation of the causes of disease, with an immediate endowment of $1,000,000. The trustees say there are prospects for increasing the endowment to several million dollars.

—Dr. Fred L. Orsinger, 750 West Congress street, who is said to have fought the State Board of Health for thirty-two years against taking out a license to practice medicine, was indicted by the June Grand July of Cook County, on a charge of having performed an operation on Pauline Sproc, which resulted in her death.

—It is reported that $60,000 has recently been contributed for the construction of a new three-story medical building, at the corner of Fulton and Ada streets, Chicago, for Loyola University Medical Department. This is to provide space for anatomic and chemical laboratories and for two large lecture rooms. It is also reported that provisions have been made for five instructors, who will devote all of their time to teaching in the medical school.

—The Kankakee State Hospital Medical Society, the membership of which is composed of the medical staff members of the Kankakee State Hospital and Psychopathic Hospital, was organized in June. The officers are: Dr. Frank P. Norbury, president; Dr. Chas. F. Read, vice-president; Dr. W. F. Lorenz, secretary and treasurer. Dr. Douglas Singer was delegated to perfect organization of the other state hospitals in order that a state association may be formed. Similar societies have been formed at Peoria and Jacksonville hospitals.

—Dr. J. Wen Glesky, for several months assistant superintendent and chief of the Eastern Illinois Medical Hospital for the Insane, has tendered his resignation, to become effective either July 15 or August 1. He will become a member of the medical staff of the Sacred Heart Sanatorium of Milwaukee. Dr. Glesky filled the vacancy caused by the resignation of Dr. Graham, having passed the competitive examination with high standing. He was active superintendent of the institution during the interval between the resignation of Dr. Greene and acceptance of Dr. F. P. Norbury. He is known at the institution as being a thoroughly capable physician and executive.

—The Chicago Fresh Air Hospital opened its doors to patients July 1. It is the only exclusive tuberculosis hospital in Chicago and accepts patients in any stage of pulmonary tuberculosis. There are no free beds but the rates are very low. Fresh air for relief of the late cases and treatment for the cure of the early ones. The hospital is located on a twenty-acre tract of farm land in Rogers Park. The following are the officers and directors: President, James A. Patton; vice-president, A. J. Ochsner, M.D.; treasurer, James Simpson; secretary, W. A. Faust. The directors are the officers, together with the following: Wm. G. Bele, F. A. Delano, Arthur Meeker, F. A. Wagner, Samuel Insull, and Ethan Gray, M.D., who is also medical superintendent of the hospital.

—The Chicago school authorities have taken up the subject of doing what can be done to prevent the injurious use of vision by children in school. Each school room is to bear a placard with a few needed suggestions on the proper use of the eyes. The main points are embodied in the following paragraph: "Your eyes are worth more to you than any book. Your safety and your success in life depend on your eyes. therefore take care of them. Always hold your head up when you read. Hold your book fourteen inches from your face. Be sure that the light is clear and good. Never read in a bad light. Never read with the sun shining directly on your book. Never face the light while reading. Let the light come from behind or over your left shoulder. Avoid books or papers printed indistinctly or in small type. Rest your eyes by looking away from the book every few minutes. Cleanse your eyes night and morning with pure water.

REMOVAL.

Dr. Arthur H. de Mendoza, of 1117 Belmont Avenue, Chicago, has removed to Piper City.

PUBLIC HEALTH.

—Fresh air schools for weak or tuberculosis children were opened in the north, west and south sides of Chicago, June 12, by the board of education, in cooperation with philanthropic agencies. No definite course will be given, but instructions will be given the children in hygiene and dietetics. Four meals a day will be furnished the children by the Chicago Permanent School Extension Committee of the Woman's Club, and a physician will be provided by the Tuberculosis Institute.

—The campaign for better health conditions in Chicago includes a permanent milk commission, which will have an appropriation to carry on its investigations and experiments; milk ordinances are to be strengthened, and the transportation of milk is to be looked after more carefully; the making of ice cream is to be supervised; further attention is to be given to the dumping of refuse into the lake; dry sweeping in the down town districts will be reduced to the minimum, and the ten-hour law for women, recently upheld by the supreme court, will be vigorously enforced.

—The health department has started its campaign in behalf of the lives of infants in the city of Chicago. The organization controlled by the infant welfare committee, of which the health department, the United Charities and the Visiting Nurses Association are the chief constituent agencies, is so subdivided that practically every available organization has been brought into it and every section of the city is reached. Along with the declaration that a strict supervision of the city's supply of milk is a big feature of the work, came the announcement that Alderman Francis W. Taylor, chairman of the city commission on the pasteurization of milk and tuberculin testing of cows, would leave next Wednesday to study milk supervision methods in France and Switzerland, Austria, Denmark, Germany and England. He expects to return about September 10. He will be accompanied by Mrs. Taylor. A "baby register" has been opened at the office of the United Charities, 51 LaSalle street, in which is entered the name of every known baby, sick or well, in Chicago. From these records field workers are assigned to the districts where sickness and mortality is the greatest.

—Chicago, the second largest city in the United States, has the lowest death rate from typhoid fever of any of the large cities in this country. In order to reduce the present figure a systematic study of typhoid fever in Chicago will be made this season. Dr. Leslie L. Lumsden, past assistant surgeon U. S. P. H. and M. H. Service, has been detailed to investigate typhoid fever in Chicago, in cooperation with the Chicago health authorities. The plan is to make an extensive study of typhoid in as many parts of Chicago as possible. In this work Dr. Lumsden will have the help of not only the health department but also of the Visiting Nurse Association and other organizations. The medical inspectors and laboratory of the health department will report typhoid direct to Dr. Lumsden. The cooperation of physicians is also requested. It is desired that physicians shall report the termination of all cases of typhoid, giving date of recovery, in order that examination may be made to determine if the patient is safe. Nurses and inspectors will visit each case to inquire into the measures employed for the safeguarding of the community. This is only for supervision and will leave to the physician in attendance every detail of treatment. Blood examinations and blood culture will be made in the laboratory, in which work it will be assisted by Professor Jordan, of University of Chicago. Dr. Lumsden has had wide experience in the investigation of typhoid outbreaks in numerous points of the country, and it is hoped to make the record of Chicago equal to that of European cities like Berlin, Vienna and Rotterdam, where the average is between three and six deaths for each 100,000.

NEW INCORPORATIONS.

—Illinois College for Midwives, Chicago; teach science of midwifery. Incorporators: Anthony M. Soukup, M.D., Flora Soukup, Rosa Soukup.

—Illinois Physicians' Drug Association, Chicago; capital, $25,000; manufacturing and dealing in drugs, physicians' supplies, etc. Incorporators: F. W. Egel, William Chrones, Barnett Lyon.

MARRIAGES.

EDWARD PATERA, M.D., to Miss Jane Smyth, both of Chicago, July 2.

LEWIS W. DUDLEY, M.D., of Elgin, Ill., to Miss Marion T. Connell, June 29.

MAX LOUIS MENDEL, M.D., Chicago, to Miss Marie Hughes, of Vicksburg, June 8.

JOHN MERLIN ALFORD, M.D., Galva, Ill., to Miss Shirley Foote, of Chicago, June 21.

HENRY SYMES STINSON, M.D., to Miss Mary H. Broadwell, both of Berwyn, Ill., June 18.

FREDERICK GEORGE DYAS, M.D., Chicago, to Miss Mabel Freer, of Hinsdale, Ill., June 29.

WILLIAM MACKEE CROSIER, M.D., Alexis, Ill., to Miss Louise Lafferty, of Chicago, June 8.

THOMAS G. MCLIN, M.D., to Miss Xena E. Inskeep, both of Fairfield, Ill., at Chicago, June 24.

CHARLES BUTTERFIELD, M.D., Rock City, Ill., to Miss Charlotte Heath, of Lawrence, Mich., recently.

FREDERICK OSCAR TONNEY, M.D., Chicago, to Miss Clara Evelyn Sanborn, of St. Paul, Minn., June 4.

DEATHS.

SYLVANUS F. HEATH, M.D., Harvard Medical School, Boston, 1866; died at his home in Gilman, Ill., June 16, aged 71.

CHARLES FREDERICK MOORE, M.D., Rush Medical College, Chicago, 1888; a member of the Illinois State Medical Society; died at his home in DeKalb, June 10, aged 48.

HENRY C. EARLY, M.D., of Granite City, 38 years old, committed suicide, by a pistol shot, on the evening of July 12, 1910, in his office. Interment at New Douglas, Ill., on July 14.

HARVEY S. SEYMOUR, M.D., Chicago Homeopathic Medical College, 1883; of Sugar Grove, Ill.; a veteran of the Civil War; died at the Aurora, Ill., Hospital, June 23, from pernicious anemia, aged 66.

CHARLES DEWITT EARLY, M.D., Rush Medical College, Chicago, 1901; formerly county physician of Peoria County, Ill.; died suddenly while seated in a chair at the Elks' Club, Peoria, Ill., July 5, aged 32.

GEORGE W. COX, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1865; formerly of Clayton, Ill.; died at the Masonic Home at Sullivan, Ill., June 16, where he had lived for the past three years, aged 49.

DANIEL A. SHEFFIELD, M.D., Northwestern University Medical School, Chicago, 1867; Rush Medical College, Chicago, 1886; formerly of Apple River, Ill., died at the home of his daughter in Lamont, Iowa, June 25, aged about 80.

Simon B. Beer, M.D., Eclectic Medical Institute, Cincinnati, Ohio, 1874; of Fairview, Ill.; served in the 103d and 36th Illinois Infantry throughout the Civil War; died in a hospital in Peoria, June 23, following an operation, aged 72.

Arthur Ludwig Anderson, M.D., University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1908; a member of the American Medical Association; health officer of Aurora, Ill.; died at the St. Charles Hospital, Aurora, June 26, as the result of complications following an operation for appendicitis some time before, aged 28.

John Wesley Tope, M.D., Rush Medical College, 1870; a member of the American Medical Association; a veteran of the Civil War; superintendent of the Asylum of the Insane at Dunning for five years; member of the Surgical Staff of Cook County Hospital for fourteen years; founder of the Oak Park Hospital; president of the Alumni Association of Rush Medical College; president of the Aux Plaines branch of the Chicago Medical Society; died at his home in Oak Park, June 18, aged 65.

The American Journal of Physiologic Therapeutics.—This new journal, the first number of which is dated July, 1910, is published by the editor, Henry R. Harrower, of 72 Madison Street, Chicago. Dr. Harrower has produced a journal of distinct value, and we welcome him and his journal to the editorial field. There is probably needed just such a journal as the doctor attempts to make, certainly the non-medical methods of treatment are deserving of every consideration on the part of the practitioner, and we expect for this journal a support which the subject deserves.